5750 Almaden Expressway, San Jose, CA 95118-3615 | (408) 265-2600 | www.valleywater.org

Our mission is to provide Silicon Valley safe, clean water for a healthy life, environment, and economy.

Santa Clara Valley Water District

February 26, 2016

Dear water district stakeholder:

The Santa Clara Valley Water District has released its 45th Annual Report on the Protection and Augmentation of Water Supplies, which documents the water district's efforts to ensure a reliable water supply to support a healthy life, environment and economy in Santa Clara County. The report presents the basis for the proposed maximum groundwater production charges for fiscal year (FY) 2016-17, and is posted on our website, www.valleywater.org.

To provide transparent information, the report is published and filed prior to the water district holding public hearings on the groundwater production charges. Groundwater replenished by the water district makes up, on average, two-thirds of the water used by residents, businesses and municipal and retail water providers countywide.

With revenue from groundwater production charges, the water district protects and augments water supplies for the health, welfare and safety of the community. The activities, programs and services undertaken with funding from groundwater production charges include:

Water supplies
- Operate and maintain local reservoirs to capture water and fill groundwater percolation ponds
- Purchase imported water and develop local water supplies to replenish the groundwater basin

Water quality
- Monitor and protect groundwater from pollutants and salt water intrusion
- Ensure proper construction and destruction of wells to prevent contaminants from infiltrating the groundwater basin

Infrastructure
- Plan and construct improvements to infrastructure such as dams, pipelines, ponds, drinking water and recycled water treatment plants, and pump stations
- Operate and maintain dams, pipelines, ponds, treatment plants and pumping stations to help sustain the groundwater aquifer

The historic drought has resulted in higher anticipated costs for imported water, which is essential to avoiding the serious consequences of groundwater overdrafting. In addition we are projecting lower water usage than assumed last year, which results in lower revenues and puts upward pressure on water rates in the near term. However, over the long term, reduced water use per capita will reduce the need for long term investments in accessing new supplies, which will minimize rate increases in the future. The following represents the maximum proposed rate increases in its two groundwater zones for FY 2016-17:

North County Zone W-2 up to 23.6%, average household increase of $7.27 per month
South County Zone W-5 up to 11.8% average household increase of $1.44 per month
Surface water users in North County up to 23.6% average household increase of $7.43 per month
Surface water users in South County up to 12.4% average household increase of $1.61 per month
Ag groundwater users in either zone up to 11.8% or about $0.42 per month per acre
Ag surface water users in either zone up to 16.8% or about $1.23 per month per acre

Responding appropriately to the most severe drought in California's history is our responsibility. It is also our responsibility to maintain this water district's financial stability in order to continue to invest in meeting the future water supply needs of Silicon Valley.

continued on next page...

The drought is a poignant reminder of the importance of having well maintained, up-to-date facilities so that water can be properly managed in the county. The economic, environmental and social well being of the Silicon Valley depends on a reliable supply of clean water now and in the future. To make that happen, the water district is planning to invest over $1.4 billion over the next 5 years for repair and rehabilitation of dams, treatment plants, pipelines, pump stations and recharge ponds that provide reliable water supply to the county.

The increase in rates is necessary to respond to the drought and pay for the many critical investments that will help insure water supply reliability now and in the future. Conservation has been and must continue to be a way of life. We appreciate the community's terrific response to the Board's call for 30% water use reductions on March 24, 2015, and we encourage the continuation of that effort despite the El Nino rains.

I encourage you to learn more about these important groundwater issues. In addition to the information on our website at www.valleywater.org, the following opportunities are also available for you to gather information and provide input:

April 12, 2016 6:00 p.m. • Board meeting • Time certain	Public Hearing (opens) Santa Clara Valley Water District 5700 Almaden Expwy., San Jose
April 14, 2016 • 6:00 p.m. open house • 7:00 p.m. meeting	Public Hearing & Open House Gilroy City Hall 7351 Rosanna Street, Gilroy
April 26, 2016 6:00 p.m. • Board meeting • Time certain	Public Hearing (concludes) Santa Clara Valley Water District 5700 Almaden Expwy., San Jose

If you have questions or concerns about groundwater, this year's charge-setting process, or how we can better serve you, please join us at an upcoming open house or public hearing, or visit our website, www.valleywater.org. You may also contact us directly by phone at (408) 265-2600, or email at clerkoftheboard@valleywater.org.

Sincerely,

James M. Fiedler, P.E., D.WRE

Chief Operating Officer
Water Utility Enterprise

45th Annual Report

Protection and Augumentation of Water Supplies
2016-2017

Sections

1 Present Water Requirements and Water Supply Availability

2 Future Water Requirements and Water Supply Availability

3 Programs to Sustain Water Supply Reliability

4 Financial Outlook of Water Utility System

5 Appendices

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Introduction

This is the 45th annual report on the Santa Clara Valley Water District's activities in the protection and augmentation of water supplies. This report is prepared in accordance with the requirements of the District Act, section 26.5.

1 **Section 1**
Provides information on the present water requirements and water supply availability;

2 **Section 2**
Addresses future water requirements and water supply availability;

3 **Section 3**
Discusses programs needed to sustain water supply reliability into the future;

4 **Section 4**
Provides the financial analysis of the water district's water utility system, including future capital improvement and maintenance requirements, operating requirements, financing methods and the proposed maximum groundwater production and other water charges by zone for fiscal year 2016-2017.

For FY 2016-17, water district staff is proposing up to a 23.6 percent increase in the municipal and industrial (M&I) groundwater production charge for the North County and up to a 11.8 percent increase for South County. For M&I surface water users the water district staff is proposing up to a 23.6 percent increase for North County and up to 12.4 percent for South County. The water district staff is proposing up to a 11.8 percent increase for agricultural groundwater users and up to 16.8 percent for agricultural surface water users in either zone. These increases are necessary to cover drought response costs and to pay for critical investments that will help ensure reliable water supply.

What is being done to minimize the rate increase?

To minimize the FY 2016-17 rate increase the water district:

- Has scaled back drought response activities from $36.3M in FY 2015-16 to $9.6M in FY 2016-17 in light of the excellent community response toward achieving the Board's call for 30 percent water use reduction
- Is currently working on refunding outstanding debt which is anticipated to generate $3M in debt service savings for FY 2016-17
- Has used temporary labor to ramp up conservation and water waste inspection programs, instead of hiring more expensive permanent or contract employees.
- Invested in a new gasket cutting machine, which will save the water district approximately $72,000 per year and better equip staff to respond to emergencies when specialty gaskets are needed for pipes, pumps, valves, etc.

We are currently projecting that water use will be 34,000 acre-feet less than assumed in last year's projections. This results in lower revenues and puts upward pressure on water rates in the near term. However over the long term, reduced water use per capita will reduce the need for long term investments in accessing new supplies, which will minimize rate increases in the future.

What do Groundwater Production Charges pay for?

What you get	What we do
Benefits • Reliable, healthy and clean drinking water • Diverse water supply sources • Protected and sustained water resources • Maximized water conservation and recycling	**Replenish the groundwater basin** • Operate and maintain local reservoirs to capture water and fill recharge ponds. • Purchase imported water. **Ensure safe drinking water** • Monitor and protect groundwater from pollutants. • Ensure proper construction and destruction of wells. **Construct, maintain and repair** • Plan and construct improvements to infrastructure such as dams, pipelines, ponds, treatment plants and pump stations. • Operate and maintain pipelines and pumping plants to help sustain the groundwater aquifer.

Local water

A complex network of reservoirs, creeks and specialized ponds replenishes the groundwater basin. The same system is also used to transport imported water so that it, too, can be used to replenish the aquifer. It all works so well that "managed" recharge actually exceeds natural recharge in nearly all years. Water pumped from the groundwater basin through wells is used by private well owners, farmers and water retailers. Some water captured in reservoirs is processed at state-of-the art drinking water treatment plants. The treated water is sold to local water retailers, such as San Jose Water Company, who use their own distribution systems to serve customers.

Imported water

Much of the county's current water supply comes from hundreds of miles away, first as snow or rain in the Sierra Nevada range of northern and eastern California, then as water in rivers that flow toward the Sacramento-San Joaquin River Delta. This "imported water" is brought into the county through the complex infrastructure of the State Water Project, the federal Central Valley Project and San Francisco's Hetch Hetchy system. Three drinking water treatment plants deliver imported water to customers, while the rest is used to replenish groundwater basins. Having treated imported water available to meet demands protects the groundwater basin from over pumping.

Recycled/Purified water

An important and growing source of water is recycled and purified water. Used primarily for irrigation by industry and agriculture, recycled water is wastewater that has been treated to meet strict standards set by the State Water Resources Control Board. Using recycled water helps conserve drinking water supplies, provides a dependable, drought-proof, locally-controlled water supply, reduces dependency on imported water and groundwater and helps preserve our saltwater and tidal habitat by reducing freshwater discharge to the San Francisco Bay in the north county and minimizing treated wastewater discharge to the Pajaro River at certain times in the south county, which is an added environmental benefit.

More than 20 years of water planning

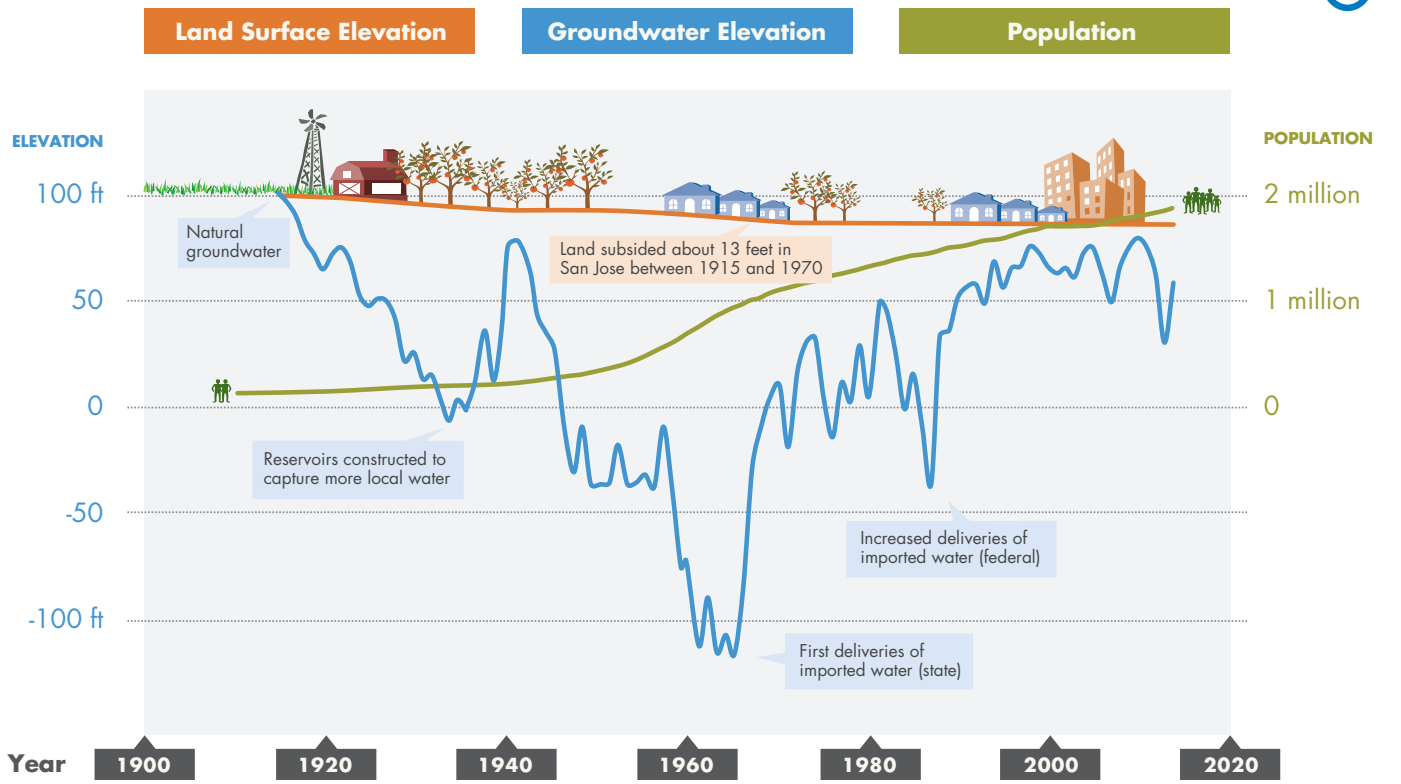
Since the last extended drought, the water district has invested in a diverse water portfolio as a strategy to buffer impacts from shortages, maintain water in the groundwater aquifer and provide a reliable supply.

These investments lessen the magnitude of critical shortages in supplies due to hydrologic conditions and regulatory actions.

SANTA CLARA COUNTY GROUNDWATER AT-A-GLANCE

a graphic representation not intended as a technical exhibit

Santa Clara Valley Water District



Last updated November 13, 2015

Over the years, the water district's water importation and groundwater management activities have stabilized groundwater levels and prevented land subsidence, or sinking.

Estimated 2015 total county water supply

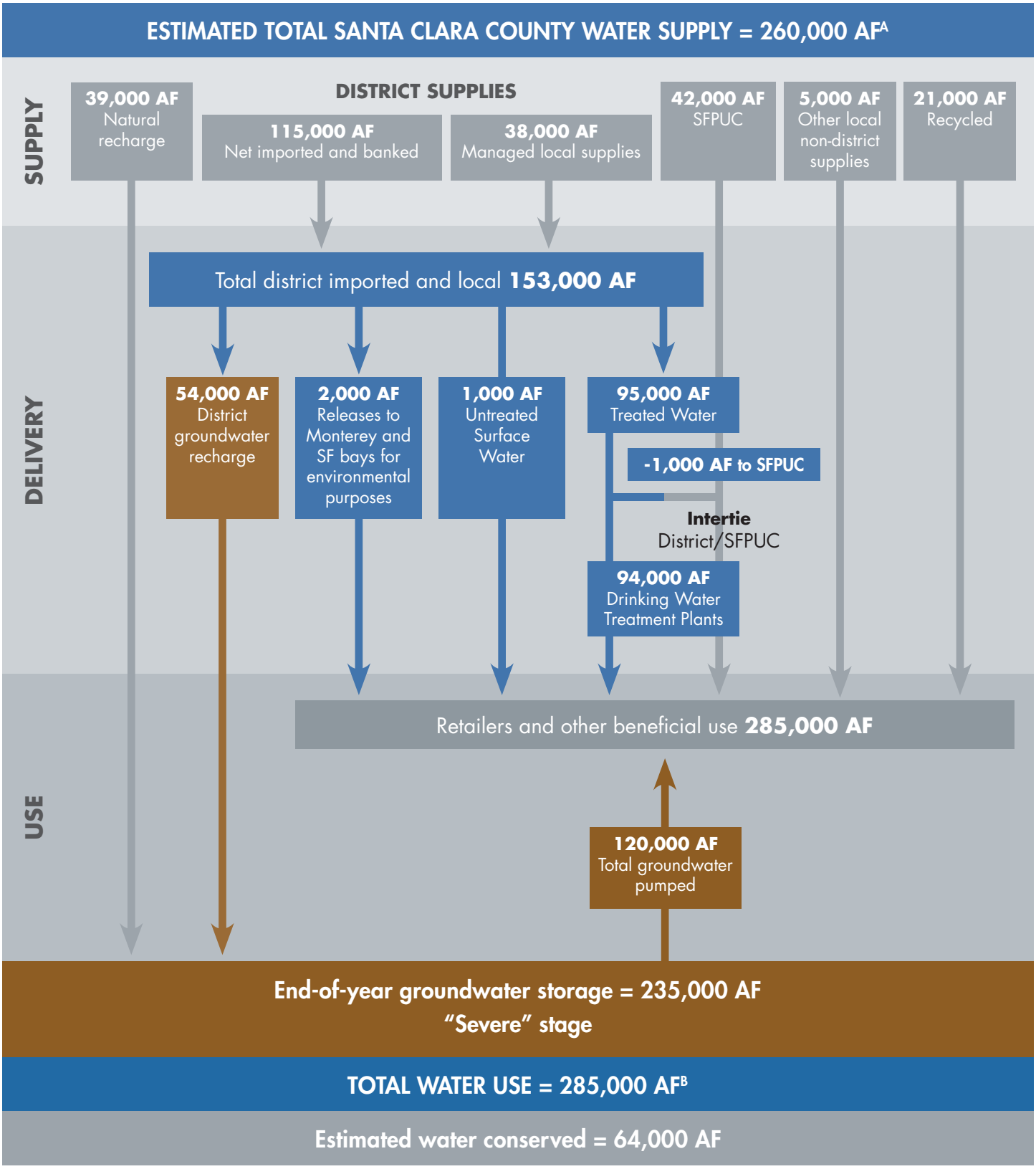
The chart at right shows calendar year 2015 estimated total water supply for Santa Clara County. Water from our 10 local reservoirs and water imported from the federal Central Valley Project and State Water Project is:

- Used to replenish local groundwater basins, which are pumped for use by individual well owners, municipal and retail water providers
- Sent to the district's three drinking water treatment plants for purification
- Supplied directly to water retailers
- Released to meet environmental needs and regulations

Non-district supplies in the county include rainfall recharge; water from San Francisco's Hetch Hetchy system; and private water rights. Note: stored groundwater is not included in the overall supply figure. For more detail on sources of supply, see Section 1.

Acre-foot: About 326,000 gallons, the amount used by two families of five over one year.

Calendar Year 2015



[A] Includes net district and non-district surface water supplies and estimated rainfall recharge to groundwater basins.
[B] Includes municipal, industrial, agricultural and environmental uses.

WATER RATES

Zone W-2 (North County)	Dollars Per Acre Foot		
Basic User/Groundwater Production Charge	**FY 2014-15**	**FY 2015-16**	**Proposed Maximum FY 2016-17**
Municipal and Industrial	747.00	894.00	1,105.00
Agricultural	19.14	21.36	23.89
Surface Water Charge			
Surface Water Master Charge	18.60	22.60	27.46
Total Surface Water, Municipal and Industrial*	765.60	916.60	1,132.46
Total Surface Water, Agricultural*	37.74	43.96	51.35
Treated Water Charges			
Contract Surcharge	100.00	100.00	100.00
Total Treated Water Contract Charge**	847.00	994.00	1,205.00
Non-Contract Surcharge	150.00	200.00	200.00
Total Treated Water Non-Contract Charge***	897.00	1,094.00	1,305.00

Zone W-5 (South County)			
Basic User/Groundwater Production Charge	**FY 2014-15**	**FY 2015-16**	**Proposed Maximum FY 2016-17**
Municipal and Industrial	319.00	356.00	398.00
Agricultural	19.14	21.36	23.89
Surface Water Charge			
Surface Water Master Charge	18.60	22.60	27.46
Total Surface Water, Municipal and Industrial*	337.60	378.60	425.46
Total Surface Water, Agricultural*	37.74	43.96	51.35
Recycled Water Charges			
Municipal and Industrial	299.00	336.00	378.00
Agricultural	42.94	45.16	47.68

*Note: The total surface water charge is the sum of the basic user charge (which equals the groundwater production charge) plus the water master charge.

**Note: The total treated water contract charge is the sum of the basic user charge (which equals the groundwater production charge) plus the contract surcharge.

***Note: The total treated water non-contract charge is the sum of the basic user charge (which equals the groundwater production charge) plus the non-contract surcharge.

Water district staff is proposing groundwater production charge increases of up to 23.6 percent for North County Municipal and Industrial (M&I) well owners and up to 11.8 percent for South County. For agricultural groundwater users, the water district staff is proposing up to 11.8 percent increase in either zone. For surface water users, the water district staff is proposing increases up to 23.6 percent for North County M&I water users, up to 12.4 percent for South County M&I water users and up to 16.8 percent for agricultural surface water users. The increases are necessary to cover drought response costs, operating expense increases and critical capital program needs, including dam seismic retrofits. The proposed maximum charges are shown in the right-hand column of the chart above.

1-1 WATER SUPPLY OVERVIEW

The mission of the Santa Clara Valley Water District (water district) is to provide Silicon Valley safe, clean water for a healthy life, environment and economy. Accordingly, staff employs an integrated approach to manage a sustainable water supply through conjunctive management and use of surface water and groundwater resources and maximizing water use efficiency.

Water supply is comprised of "incoming" supplies from local and imported sources, as well as previously-stored supplies, referred to as carryover, withdrawn from in-county and/or out-of-county surface water and groundwater storage.

Local Supplies

Local groundwater resources make up the foundation of water supply in Santa Clara County, but they need to be augmented by the water district's comprehensive water supply management activities in order to reliably meet the needs of county residents, businesses, agriculture and the environment. These activities include direct managed recharge and in-lieu groundwater recharge through the provision of treated surface water and untreated surface water, acquisition of supplemental water supplies, water conservation and recycling, and programs to protect, manage and sustain water resources.

Runoff from precipitation constitutes the bulk of the local water supplies and is captured in local reservoirs. The water is released for groundwater recharge, in-stream beneficial uses, local raw water customers, and treatment at the treatment plants. Some of the precipitation infiltrates and recharges the groundwater basins, although this natural recharge is insufficient to fully replenish groundwater pumped from the basins.

An additional local water supply is recycled water used for non-potable purposes. Use of recycled water offsets demand for potable water. Every gallon of recycled water used in this county saves an equal gallon of groundwater or treated drinking water.

Imported Supplies

The water district's imported sources of supply originate from natural runoff and releases from statewide reservoirs and pumped out of the Sacramento-San Joaquin Delta by the State Water Project (SWP) and the federal Central Valley Project (CVP). The water district holds contracts with the State and federal government for 100,000 acre-feet of supply from the SWP and 152,500 acre-feet of supply from the CVP per year, respectively; actual deliveries depend on the availability of water supplies after meeting regulations to protect the environment and Delta water quality. The imported water delivered by the SWP and CVP is sent to the water district's three water treatment plants, used to supplement groundwater recharge, or is stored in local and State reservoirs for use in subsequent years. The water district also stores its imported water in the Semitropic Groundwater Bank in Kern County for withdrawal during dry periods. Treated imported water is sold to seven of the 13 water retailers located within Santa Clara County to offset groundwater pumping. The water district may also augment its imported supplies by taking deliveries of available temporary flood flows from the Delta early in the year, before imported water contract allocations and local hydrology are known. If water supplies are insufficient to meet needs, the water district may also purchase transfer water or participate in exchanges to supplement supplies; both transfer and exchange supplies are conveyed to Santa Clara County from the Delta. Additionally, eight water retailers purchase water from the City and County of San

Francisco that originates from the Tuolumne River watershed and watersheds in the Bay Area. Without all of these supplemental supplies, groundwater pumping would exceed sustainable groundwater extraction levels.

Conjunctive Water Management

Since the 1930s, the water district's water supply strategy has been to coordinate the management and use of surface water and groundwater to maximize water supply reliability. The 2012 Groundwater Management Plan, adopted by the water district Board of Directors (Board) in July 2012, describes the water district's conjunctive management activities, as well as basin management objectives, strategies, and related outcome measures. The Sustainable Groundwater Management Act (SGMA) was signed into State law in September 2014, with the intent of promoting the local, sustainable management of groundwater supplies. SGMA identifies the Santa Clara Valley Water District as one of fifteen exclusive groundwater management agencies within their jurisdictions. The water district will continue to sustainably manage the Santa Clara and Llagas Subbasins according to the District Act and will fully comply with SGMA.

Key water district conjunctive management efforts include the managed recharge of imported and local surface water and in-lieu groundwater recharge through the provision of treated surface water, raw surface water and recycled water, acquisition of supplemental water supplies, and water conservation. These in-lieu recharge activities help reduce demands on groundwater or surface water, and are as important as managed recharge in helping to maintain a reliable water supply.

In 2015, the water district replenished the groundwater basins with about 54,000 acre-feet of local and imported surface water. The largest source of in-lieu recharge was the distribution of treated water (94,000 acre-feet). The water district saved an estimated 64,000 acre-feet of water through programs designed to reduce residential, commercial, and agricultural water use and make conservation a way of life in the county. A smaller, but important and growing source of in-lieu recharge is recycled water, which provided about 21,000 acre-feet of water for irrigation, industry, and agriculture in 2015. Using recycled water reduces dependency on groundwater and surface water, helps conserve drinking water supplies, and provides a locally-controlled, drought-proof supply. The water district is partnering with local recycled water producers to further expand the use of recycled water.

Without the water district's conjunctive use management programs (including managed and in-lieu recharge), groundwater levels would be considerably lower than they are today, reducing water supply reliability and increasing the risks of renewed land subsidence (sinking) and salt water intrusion. Water supplies are becoming increasingly constrained by challenges including uncertainty in surface water supplies, extended droughts, climate change, and increased water demands. Maintaining the water district's conjunctive use management programs and expanding them as needed is critical to making the best use of local water resources and ensuring a reliable water supply both now and in the future.

Although the groundwater basins are the water district's largest water storage facility, the limiting factor of providing a reliable water supply in drought periods is the overall capacity and capability to operate a conjunctive use management system of surface water and groundwater supplies. Most of the local reservoirs were sized for annual operations, storing water in winter for release to groundwater recharge in summer and fall. The exception is the Anderson-Coyote reservoir system, which provides valuable carryover of supplies from year to year and can serve as a backup supply source to the water district's water treatment plants when imported water deliveries are curtailed. However, dam safety operating restrictions placed on Anderson, Coyote, Almaden, Calero and Guadalupe reservoirs have resulted in loss of about a quarter of the total surface storage capacity (as shown in Table 1-1.1) as well as significant loss of water supply yield.

Table 1-1.1 Original and Restricted Capacities of Major Water District Reservoirs

Reservoir	Year Built	Reservoir Capacity (acre-feet)	Restricted Capacity (acre-feet)	Use
Almaden*	1935	1,586	1,472	Groundwater recharge, treated for drinking water
Anderson*	1950	90,373	61,810	Groundwater recharge, treated for drinking water
Calero*	1935	9,934	4,585	Groundwater recharge, treated for drinking water
Chesbro	1955	7,945	7,945	Groundwater recharge
Coyote*	1936	23,244	12,382	Groundwater recharge, treated for drinking water
Guadalupe*	1935	3,415	2,218	Groundwater recharge
Lexington	1952	19,044	19,044	Groundwater recharge
Stevens Creek	1935	3,138	3,138	Groundwater recharge
Uvas	1957	9,835	9,835	Groundwater recharge
Vasona	1935	495	495	Groundwater recharge
Total		**169,009**	**122,924**	
* Reservoirs with dam safety operating restrictions				

As part of annual operations planning, the water district routinely opts to carry over a portion of imported water supplies for future years. Even though the amount is often limited by state or federal project operations, it provides cost-effective insurance against a subsequent dry year. Additionally, the water district has invested in a water banking program at the Semitropic Water Storage District which provides 350,000 acre-feet of out-of-county water storage capacity. Together with water transfers and exchanges, this additional storage helps the water district manage uncertainty and variability in supply as each water year develops.

Managing a complex system of surface water and groundwater resources is further complicated by hydrologic uncertainties, regulatory restrictions and aging infrastructure, as discussed in the following sections of this report.

1-2 PRESENT WATER SUPPLY CONDITIONS

Precipitation

Locally, rainfall for the 2014–15 season at downtown San Jose was at 93 percent of average[1]. Total rainfall from July 2014 through June 2015 resulted in a below-average rainfall season, based on data going back to 1874.

The 2015–16[2] rainfall year began with a below-average December. Cumulative rainfall at the San Jose gauge from July 1, 2015 through December 31, 2015 was estimated to be 4.57 inches. Rainfall at the San Jose gauge in January 2016 totaled 3.7 inches, which is above average for that month. Local rainfall as of February 1, 2016 was 58 percent of seasonal average to date in San Jose and 67 percent in the Coyote watershed.

Statewide precipitation by December 31, 2015 was at 100 percent of seasonal average to date. Statewide snow water equivalent for the same period was 106 percent.

The National Weather Service (NWS) weather models predicted a strong chance of strong "El Niño" conditions, peaking in late fall or early winter and weakening by Spring 2016. It is expected that there will be a 33% chance of above normal rainfall in the Bay Area.

Imported Water Allocations

The Statewide drought continued for a fourth year in 2015, with limited water supplies available from both the SWP and CVP. The SWP allocation for 2015 was set at ten (10) percent in December 2014 and increased to a final allocation of twenty (20) percent by March 2015. CVP allocations hit historic lows, with the CVP agricultural allocation for water service contractors set at zero (0) percent for the second year in a row, and the CVP M&I allocation finalized at 25 percent. Given concerns about the falling groundwater levels and increasing threats of land subsidence, the water district petitioned for and received 7,800 acre-feet (AF) of public health and safety supplies from the U.S. Bureau of Reclamation. Governor Brown extended his Drought Emergency Declaration in February 2015. Table 1-2.1 summarizes the year types and final allocations from the SWP and CVP to the water district for the last five years.

The winter of 2015-2016 has been closer to average hydrology, but because the water year is starting with a large deficit in water supplies, initial allocations are expected to be low. In December 2015, Department of Water Resources (DWR) set the initial SWP allocation for 2016 at ten (10) percent, and the State Water Resources Control Board (SWRCB) is continuing its call for mandatory conservation through February 2016. Due to a series of storms, the state increased the 2016 SWP allocation to fifteen (15) percent on January 26, 2016. However, on February 2, 2016, the State Water Resources Control Board continued the call for conservation at least through May 2016 with a goal to cut water consumption by 23 percent overall. The initial CVP allocation will not be available until after the writing of this report.

[1] Rainfall at San Jose (station 131) was approximately 13.4 inches or 93 percent of average for the rainfall season from July 1, 2014 to June 30, 2015.

[2] A portion of precipitation data for rainfall year 2015-16 is provisional until verified by staff in Spring of 2016.

Table 1-2.1 Statewide Water Year Types and Final Imported Water Allocations

Water Year	Year Type		Final allocations to the water district as % of contract amounts		
	Sacramento River	San Joaquin River	SWP	CVP	
				M&I	AG
2010-11	wet	wet	80%	80%	80%
2011-12	below normal	dry	65%	75%	40%
2012-13	dry	critical	35%	70%	20%
2013-14	critical	critical	5%	50%	0%
2014-15	critical	critical	20%	25%	0%

Water Banking

To provide reliability in future years, the water district banks water in groundwater storage outside of the county. This involves conveyance of the water district's state and/or federal water supplies to a banking partner, another water district that operates a groundwater conjunctive use program. Storage in the bank occurs when water is physically delivered to ponds to soak into the aquifer, or when surface water deliveries are used by the banking partner in lieu of groundwater pumping ("in-lieu recharge"). Return of stored water is accomplished when the banking partner uses groundwater in place of surface supplies, or physically pumps groundwater into the surface conveyance system for use by the Department of Water Resources for the SWP. The water district is then delivered imported water from the Delta that would have otherwise been delivered to the banking partner or to other SWP contractors. The water district banks SWP and CVP water at the Semitropic Water Storage District in Kern County. Table 1-2.2 shows the annual changes and year-end balances for banked water during calendar years 2013 through 2014 and the estimated activity for 2015.

Table 1-2.2 Water District Water Banking for Calendar Years 2013 through 2015 (Acre-Feet)

Water Banking	Actual 2013	Actual 2014	Estimated 2015*
SEMITROPIC WATER STORAGE DISTRICT			
Beginning Balance (January 1)	307,665	262,665	227,550
Water District Deposit or Withdrawal	-45,000	-35,115	-45,793
TOTAL BANKED ENDING BALANCE (December 31)	**262,665**	**227,550**	**181,757**

** 2015 withdrawal quantity from Semitropic being finalized*

The water district has a contractual right to deliver or "put" up to 31,675 acre-feet of water to storage each year. In any given year, the water district may be able to deliver more than 31,675 acre-feet by using the unused "put" capacity of other banking partners, including Semitropic. The maximum amount of water

delivered to storage in a single year was 89,022 acre-feet in 2005. The water district can withdraw or "take" up to 31,500 acre-feet at a minimum, or up to 78,050 acre-feet of water from storage in any given year, depending upon the SWP allocation. The higher the SWP water supply allocation, the greater the "take" capacity. The largest amount of water previously withdrawn by the water district in a single year was 45,000 acre-feet in 2013.

An estimated total of 45,793 acre-feet of water was secured by the water district in 2015. Of the estimated 45,793 acre-feet of the District's previously-stored supplies available from Semitropic in 2015, an estimated 44,759 acre-feet was delivered to the county in 2015, with the balance anticipated to be used to help meet demands in 2016.

Reservoir Storage

Reservoir storage volumes in Lake Oroville, Shasta Lake, and Folsom Lake began calendar year 2015 at 62, 66 and 90 percent of average beginning-of-year volumes, respectively. By the end of December 2015, those levels had decreased to 47, 50 and 50 percent of average. By January 31, 2016, the levels had increased to 66, 76 and 104 percent, respectively.

Locally, the 2015–16 water year[3] started with water district reservoirs at substantially low levels. October 1, 2015 total storage in these reservoirs was 71% of the 20-year average and 37% of capacity at the spillway crest.

Total storage in water district reservoirs as of February 1, 2016 was 42 percent of capacity. However because of storage restrictions in place for half of the water district reservoirs, the combined storage was at 57 percent of restricted capacity. Total storage at water district reservoirs on that date was 76 percent of the 20 year average.

Despite indications of strong El Niño conditions this winter at the time this report was written, it will likely take more than one winter season for the state's largest reservoirs and local storage to fully recover from the four-year drought.

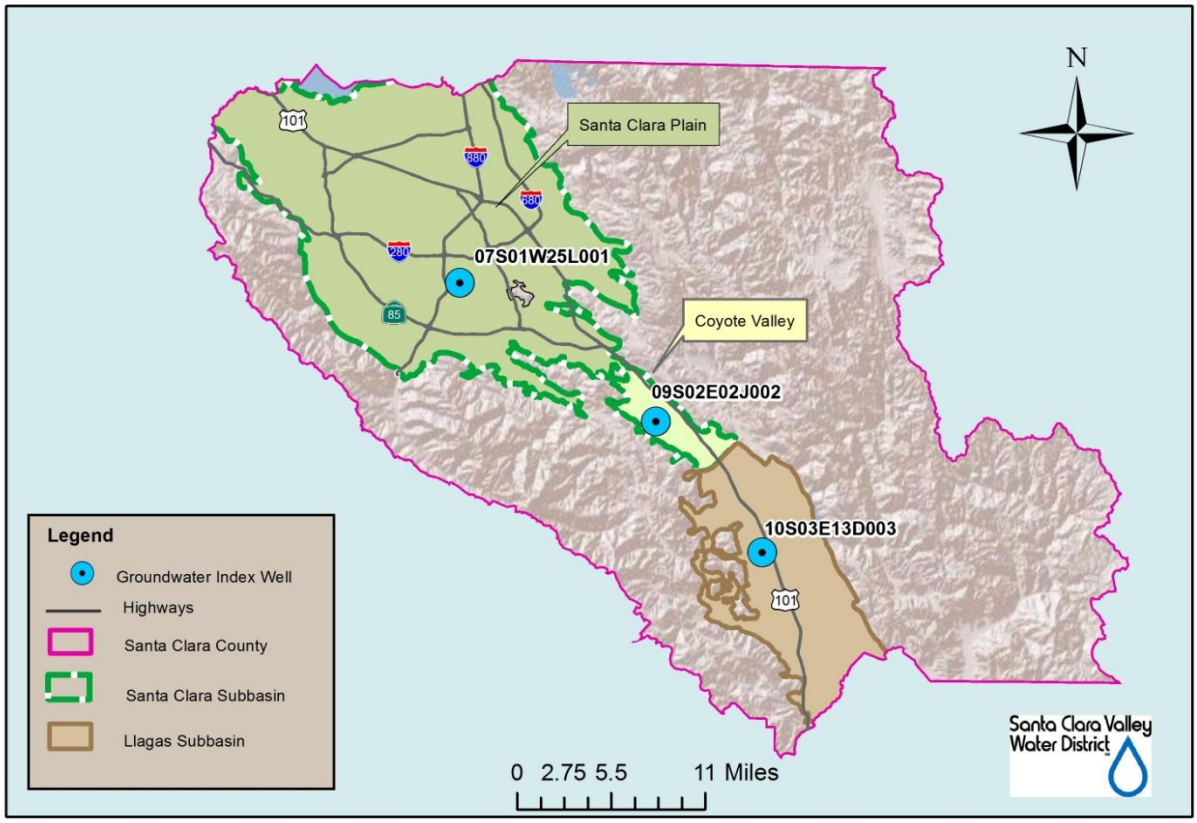
Groundwater Basins

While reservoirs are a visible indicator of our local water supply, the majority of our local reserves lie hidden beneath our feet in the groundwater aquifers. Because the groundwater basins can store two times more water than all of the local surface water reservoirs combined, the water district strives to maintain adequate storage in the groundwater basins in wet and average years to ensure water supply reliability during dry periods such as the last several years.

[3] Water year is the twelve month period between October 1 and September 30.

Despite the continued dry conditions in 2015, groundwater levels improved at many wells throughout the county compared to 2014, including the three index wells used to indicate general groundwater trends and conditions (see locator map in Figure 1-2.1 and related hydrographs in Figures 1-2.2 through 1-2.4). This is due to the decrease in pumping of about 50,000 acre-feet (Table 1-3.1) and about 28,000 acre-feet of increased recharge (Table 1-3.2) from 2014 to 2015. However, groundwater levels throughout the county remain generally lower than pre-drought levels. In 2015, water levels remained above thresholds established to prevent renewed land subsidence[4]. The water district continues to closely monitor groundwater levels and land subsidence conditions.

Figure 1-2.1 Map of Index Well Locations



[4] To avoid additional permanent subsidence due to groundwater overdraft, the District has established water level thresholds at ten index wells throughout the Santa Clara Plain. A tolerable rate of 0.01 feet per year of land subsidence was applied to determine threshold groundwater levels for these wells. Threshold groundwater levels are the groundwater levels that must be maintained to ensure a low risk of unacceptable land subsidence.

Figure 1-2.2 Historical Santa Clara Plain Groundwater Elevations, Index Well 07S01W25L001

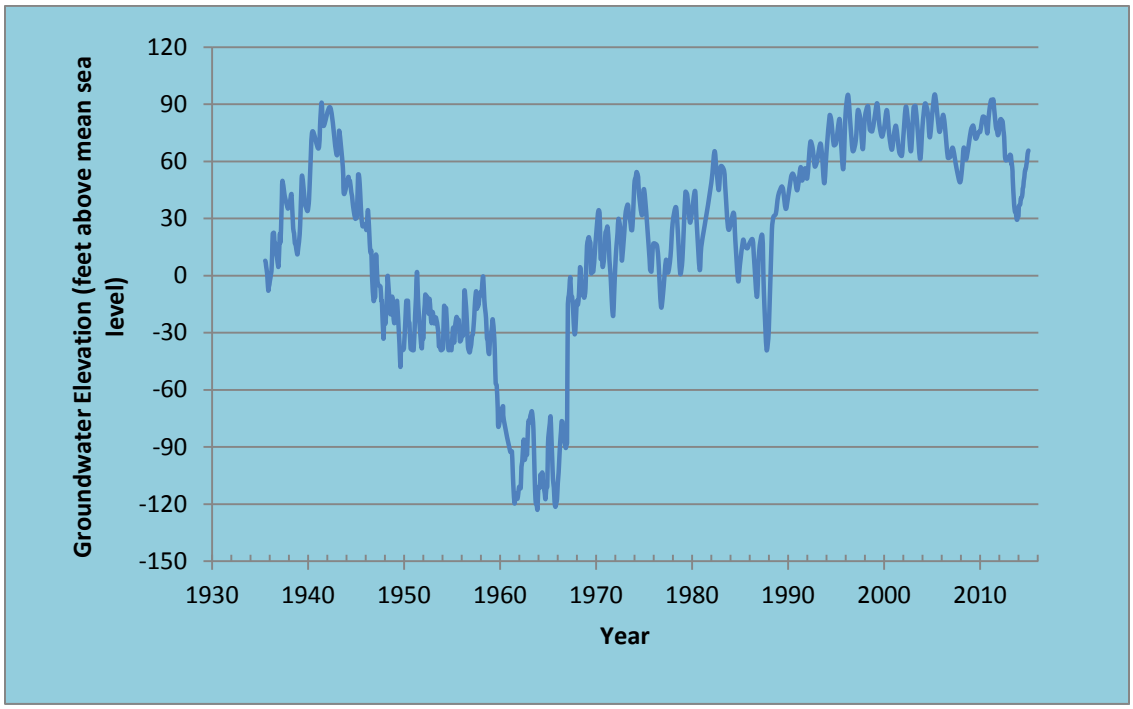


Figure 1-2.3 Historical Coyote Valley Groundwater Elevations, Index Well 09S02E02J002

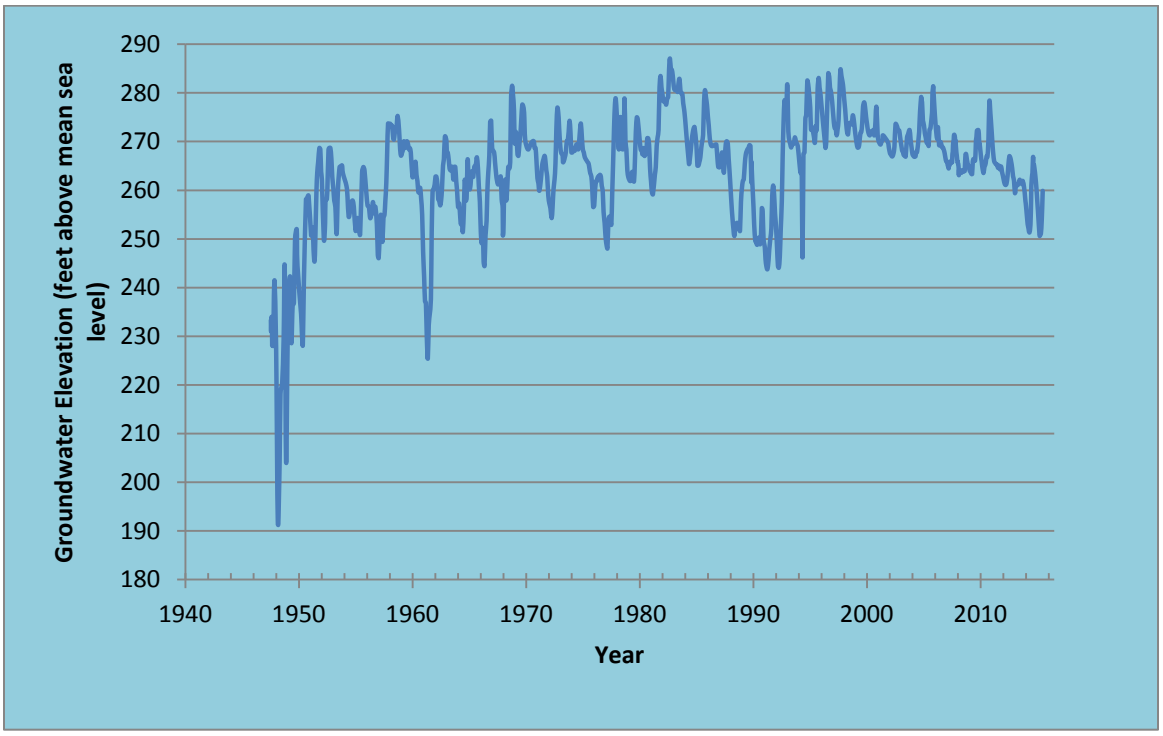
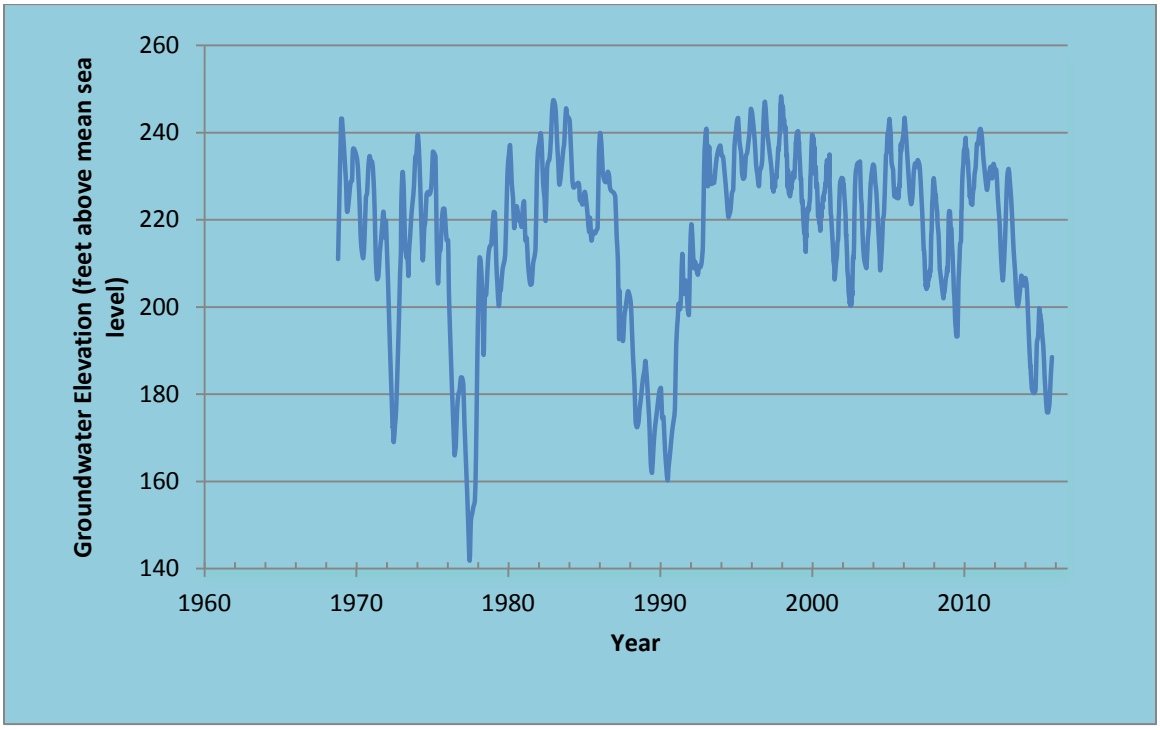


Figure 1-2.4 Historical Llagas Subbasin Groundwater Elevations, Index Well 10S03E13D003



The estimated reduction in groundwater storage in 2015 is about 21,300 AF as shown in Table 1-2.3. This is a notable improvement from 2014, when groundwater reserves were reduced by about 81,000 AF. The improvement can be attributed to excellent water use reduction by the community, close cooperation with water retailers, and water district efforts to secure supplemental water supplies. The water district continues to closely track water supply conditions and modify operations accordingly. Monthly water supply conditions are summarized in the water district's Water Tracker, which is available on the water district website[5]. A more detailed evaluation of groundwater conditions will be presented in the water district's annual groundwater report, which will be completed in June 2016 and will include reporting on outcome measures related to groundwater storage, levels, quality and subsidence.

[5] The Water Tracker is available on the water district website:
http://www.valleywater.org/EkContent.aspx?id=7491&terms=water+tracker

Table 1-2.3 End-of-Year Groundwater Storage and Change in Storage

	Cumulative Groundwater Storage Estimates AF (acre feet)		
	End of Year 2014	End of Year 2015	Change in Storage AF
Santa Clara Subbasin, Santa Clara Plain	235,700	221,000	-14,700
Santa Clara Subbasin, Coyote Valley	5,400	400	-5,000
Llagas Subbasin	15,400	13,800	-1,600
Total	**256,500**	**235,200**	**-21,300**

Note: Groundwater storage estimates are based on accumulated groundwater strorage since 1970, 1991, and 1990 for the Santa Clara Plain, Coyote Valley, and Llagas Subbasin, respectively. These estimates are refined as additional pumping and managed recharge data become available.

Water Use Reduction

The water district's Water Shortage Contingency Plan evaluates the water use reduction needed based on projected end of year groundwater storage as shown in Table 1-2.4. In 2014 the Santa Clara Valley Water District's Board of Directors (Board) approved a resolution setting a countywide water use reduction target equal to 20 percent of 2013 water use through December 31, 2014. The Board-adopted resolution also recommended that retail water agencies, local municipalities and the County of Santa Clara implement mandatory measures as needed to achieve the 20 percent water use reduction target. In November 2014, the Board extended the 20 percent conservation target to June 30, 2015.

Due to the ongoing drought and the community not reaching the 20 percent target in 2014, groundwater storage at the beginning of 2015 was in the "Alert" stage of our Water Shortage Contingency Plan. On March 24, 2015, the Board adopted a resolution setting a water use reduction target of 30 percent for 2015. The Board-adopted resolution also included a restriction on outdoor watering of ornamental landscapes or lawns with potable water to no more than two days per week. This action was based on the water district's Water Shortage Contingency Plan and the estimated 2015 water supply conditions that showed groundwater reserves reaching the Stage 4 ("Critical") level by the end of the calendar year if water use reduction measures were not implemented. The March resolution was set to expire on December 31, 2015. However due to the need for continued conservation, the Board extended the 30 percent water use reduction target to June 30, 2016 on November 24, 2015.

Water use reductions by the community and additional imported water resulted in improved end-of-year groundwater storage compared to the initial projection. As shown in Table 1-2.4, the estimated end of 2015 storage of about 235,000 acre-feet falls into the "Severe" stage, the third stage in our five-stage Water Shortage Contingency Plan.

Table 1-2.4 Water Shortage Contingency Plan Action Levels

	Stage	Title	Projected End-of-Year Groundwater Storage (Acre-Feet)	Suggested Short-Term Reduction in Water Use
	1	Normal	Above 300,000	None
	2	Alert	250,000 to 300,000	0 – 10%
December 2015*	3	Severe	200,000 to 250,000	10 – 20%
Early 2015 Projection*	4	Critical	150,000 to 200,000	20 – 40%
	5	Emergency	Less than 150,000	Up to 50%

*In March 2015, the Board adopted a resolution calling for 30% countywide water use reduction based on projected critical conditions if short-term water saving measures were not implemented (lower arrow). The estimated December 2015 groundwater storage accounts for the 27% countywide reduction achieved in calendar year 2015 (upper arrow).

If dry conditions continue and additional supplies are not secured, groundwater storage may fall into the "Critical" stage or lower by the end of 2016 if no reduction measures are implemented. Continued water use reduction will likely be needed throughout 2016 to minimize further storage decline (under a low precipitation scenario for the remainder of the season) or enable a partial recovery of groundwater storage (under a median precipitation scenario for the remainder of the season).

Overview of District Drought Response

In February 2014, the water district developed a strategic approach to respond to the drought and the Board's call for water use reductions. A cross-functional team from across the organization was convened and a Drought Response Strategy was formulated for implementation in 2014 and 2015. The water district's comprehensive drought response was implemented through fifteen strategies grouped into four general categories: (A) water supply and operations; (B) water use reduction; (C) drought response opportunities; and (D) administrative and financial management. Specific examples include:

- Secure Imported Water Supplies: Strategy included working with state and federal project operators (i.e. DWR and U.S. Bureau of Reclamation) and contractors of the SWP and CVP to secure the water district's 2014 and 2015 imported water allocations. It also included supporting initiatives to control Delta salinity; providing for return of water from the Semitropic Water Bank; determining the availability of supplemental water transfers and imported water carryover for 2015 and 2016; and coordinating with San Francisco Public Utilities Commission on drought impacts to the Hetch-Hetchy Project.

- Manage surface water and groundwater supplies: To maximize water supply reliability and protect groundwater, this strategy optimized distribution of limited local and imported supplies, including deliveries to the three water treatment plants, operation of water district reservoirs and the groundwater recharge system, and deliveries to untreated surface water users.

- Optimize treated water quality and availability: Strategy focused on optimizing treatment plant operations and source water supplies to meet drinking water quality and reliability objectives, in coordination with the water district's retail treated water contractors. It included continuing to meet treated water quality objectives despite poorer water quality conditions in the Delta, and projected low storage levels in San Luis Reservoir that affected both the quality of this source of supply as well as the ability to pump water from the reservoir during the late summer and early fall months.

- Reduce 2015 water use by 30% compared to 2013 water use: Cumulative savings, as reported by the combined major water retailers, was 27 percent from January through December 2015 when compared to 2013 water use.

- Expedite purified water program development and implementation: Staff identified potential opportunities for additional recycled water projects (up to 10 million gallons per day) to help alleviate water supply shortages assuming the current drought continues; pursuing regulatory proposals to provide for safe implementation of indirect and direct potable reuse projects; and completing the master planning of all recycled water efforts.

- Leverage opportunity to maintain uniquely accessible water district facilities: Some groundwater recharge ponds that have been in continuous service for decades were drained, providing opportunity for cleaning and refurbishment.

- Advance community knowledge, awareness, and understanding of the water supply system and services provided by the water district: Strategy included efforts to expand outreach communication and engagement with general public and working even more closely with media to convey drought and water conservation messages.

- Secure Federal and State legislative support to offset drought impacts and accelerate conservation and recycling programs: Staff is tracking a number of State and federal legislative initiatives aimed at providing drought relief and funding to offset costs of drought response and accelerate water supply and water use efficiency projects.

The water district also collaborated with water retailers, municipalities and the County to increase water conservation efforts and public outreach, and to implement other actions to reduce water use. Local water retailers responded to the water district's call in various ways. Most retailers called for 30 percent reductions and activated or adopted water use restrictions, including a consistent two day per week watering restriction. Most water retailers took additional actions to respond to the State Water Resources Control Board's (SWRCB) Emergency Regulations that were adopted in July 2014. Nearly every water retailer increased their outreach and education efforts.

1-3 PRESENT WATER USE AND WATER REQUIREMENTS

Due to the ongoing drought, in March 2015 the Board adopted a resolution calling for a 30 percent reduction in water use compared to 2013. The call for a 30 percent reduction, which was set to expire at the end of the year, was extended through June 30, 2016 by the Board in November 2015. Because of this call, water demands decreased by roughly 27% percent in 2015. Imported water allocations, transfers, exchanges, and groundwater banking brought approximately 127,033 acre-feet to meet 2015 demands.

To meet current and future demands, the water district continues to implement its long-term water conservation program. With a target of saving nearly 100,000 acre-feet per year by 2030, the long-term program offers technical assistance and a variety of incentives that achieve sustainable water savings. The program saved approximately 63,600 acre-feet in calendar year 2015.

Table 1-3.1 shows unadjusted water use in Santa Clara County and Table 1-3.2 shows a breakdown of groundwater production and managed recharge by water charge zone. Table 1-3.3 shows a historical summary of surface water supply, use and distribution for the last three years.

Table 1-3.1 Water Use in Santa Clara County for Calendar Years 2013-2015

Historical Calendar Year Water Use	In Acre-feet		
	Actual 2013	Preliminary 2014	Estimated 2015*
Groundwater Pumped	154,600	169,500	119,800
Treated Water	126,500	91,500	94,500
Raw Surface Water Deliveries	3,600	2,600	1,500
SFPUC Supplies to Local Retailers[1]	55,200	47,600	42,400
San Jose Water Company Water Rights	7,800	1,300	4,800
Recycled Water	20,500	22,100	21,200
Total	**368,200**	**334,600**	**284,200**

[1] San Francisco Public Utilities Commission supplies to 8 retailers and NASA-AMES

** All values are rounded to the nearest hundred*

Note: Stanford has historically utilized between 200-1000 AFY of its water rights. This is not reflected in the table above.

Table 1-3.2 Groundwater Production and Managed Recharge by Water Charge Zone

Charge Zone	Zone W-2					Zone W-5				
	Groundwater Production, acre-feet			Managed Recharge		Groundwater Production, acre-feet			Managed Recharge	
Calendar Year	Agricultural	Non Agricultural	Zone Total	Zone Total Recharge, acre-feet	Managed Recharge as % Production	Agricultural	Non-Agricultural	Zone Total	Zone Total Recharge, acre-feet	Managed Recharge as % Production
1997	1,910	118,550	120,460	78,040	65%	32,746	21,710	54,456	32,120	59%
1998	1,101	99,210	100,310	66,670	66%	25,861	20,009	45,870	26,130	57%
1999	1,087	106,403	107,490	80,900	75%	29,144	23,767	52,910	26,500	50%
2000	972	112,399	113,371	88,400	78%	26,920	24,537	51,457	30,200	59%
2001	752	114,606	115,358	84,620	73%	28,510	25,437	53,947	32,040	59%
2002	707	103,952	104,659	71,660	68%	27,537	23,787	51,324	35,300	69%
2003	447	96,208	96,656	74,200	77%	25,964	24,256	50,220	35,000	70%
2004	579	105,137	105,716	66,700	63%	27,634	25,533	53,167	31,000	58%
2005	826	86,640	87,467	69,200	79%	25,458	25,237	50,695	32,500	64%
2006	429	82,195	82,624	65,770	80%	24,420	28,616	53,036	30,440	57%
2007	1,087	108,748	109,835	58,000	53%	27,660	31,424	59,084	33,410	57%
2008	1,074	106,579	107,653	51,290	48%	28,183	33,520	61,703	36,100	59%
2009	608	97,242	97,850	63,000	64%	24,874	32,400	57,274	39,100	68%
2010	437	84,227	84,664	58,540	69%	22,616	29,459	52,075	42,210	81%
2011	298	70,989	71,287	54,820	77%	22,544	29,834	52,378	39,360	75%
2012	460	75,931	76,391	55,940	73%	25,010	30,847	55,857	40,790	73%
2013	562	94,731	95,293	59,600	63%	26,325	32,940	59,265	37,100	63%
Prelim. 2014	900	113,700	114,600	11,500	10%	26,000	28,900	54,900	15,000	27%
Estim. 2015	400	67,200	67,600	28,300	42%	26,300	25,900	52,200	25,900	50%

Table 1-3.3 Historical Surface Water Supply, Use and Distribution for Three Previous Calendar Years

			Calendar Year, in Acre Feet		
			Actual 2013	Preliminary 2014	Estimated 2015
District Supplies					
Local Surface Water					
	Inflow	(net, minus evap)	10,950	26,520	18,850
	Surface Water Storage Releases (+) or additions to(-)		+34,320	-11,050	+18,650
Imported Water					
	Prior year carryover		26,360	31,230	45,080
	Delta flood flows		0	0	0
	State Water Project contract allocation		35,000	5,000	20,000
	San Felipe Division contract allocation[1.]		97,620	65,000	40,320
	Semitropic water bank withdrawals[2.]		45,000	35,120	45,790
	Water transfers and exchanges[2.]		21,700	17,930	20,920
	Returned to District from SFPUC via intertie		640	690	0
Total District Supplies:			**271,590**	**170,440**	**209,610**
Distribution of District Supplies					
	To groundwater recharge				
		Santa Clara Subbasin	59,570	11,490	28,300
		Coyote Subbasin	14,450	7,200	6,580
		Llagas Subbasin	22,620	7,810	19,310
	To treated water		126,470	91,460	94,490
	To surface water irrigation		3,610	2,560	1,470
	To environment		8,640	4,090	2,120
	To Semitropic water bank		0	0	0
	To imported water carryover				
		Used by District	31,230	45,080	52,260
		Returned to SWP/CVP	0	0	0
	To water transfers and exchanges		5,000	0	4,500
	Returned to SFPUC via intertie		0	750	580
Total Distribution of District Supplies:			**271,590**	**170,440**	**209,610**
Other Supplies					
San Jose Water Co. water rights[3.]			7,790	1,290	4,800
Recycled water (including District)			20,520	22,060	21,150
SFPUC deliveries to retailers			55,230	47,560	42,400
Total Other Surface Water Supplies			**83,540**	**70,910**	**68,350**
Total Managed Supplies:			**355,130**	**241,350**	**277,960**

Note: Numbers rounded to the nearest 10AF.

[1.] 2015 San Felipe Division Contract amount includes supply for public health and safety.

[2.] These values include supply secured in that year but may have been carried over to a future year.

[3.] Stanford has historically utilized between 200-1000 AFY of its water rights. This is not reflected in the table above.

2-1 OVERVIEW

As the water management agency and principal water wholesaler for Santa Clara County, the water district is responsible for planning (in collaboration with San Francisco Public Utilities Commission [SFPUC] and local retailers) the water supply of the county to meet current and future demands.

Water supply reliability includes the availability of the water itself as well as the reliability and integrity of the infrastructure and systems that capture, store, transport, treat and distribute it. The water district strives to meet water demand under all hydrologic conditions, including satisfying its treated water contracts for deliveries to the retail water suppliers. As the groundwater manager for the county, the water district's goal is to protect and augment groundwater to ensure it is available both now and in the future.

Since water supplies available to the county are obtained from both local and imported sources, the water district's water supply is a function of the amount of precipitation that falls both locally and in the watersheds of Northern California. The supply available is also a function of the facilities in place to manage the supply. Sources of water supply in northern Santa Clara County (North County) consist of locally developed and managed water, recycled water, water imported by the water district via the SWP and the federal CVP, and supplies to some of the retail water suppliers from the SFPUC's regional water system (Hetch Hetchy and Bay Area watersheds). Southern Santa Clara County (South County including Coyote Valley and Llagas Subbasin) is supplied by locally developed and managed water, recycled water, and CVP water.

2-2 PROJECTED FUTURE WATER SUPPLY AVAILABILITY AND DEMAND

Near Term Water Supply Availability

Water district staff begins preparing the water district's Annual Water Supply Operations and Contingency Strategy for the upcoming calendar year in the fall of each year. The strategy is composed of numerous operations and water supply management scenarios that account for the probable range of water supply conditions that the water district can expect in the upcoming year. These variable conditions include precipitation, locally and in the Sierra, as well as imported supplies. Local precipitation and runoff impact our local reservoir storage, stream flow, and natural recharge of the groundwater basins. The quantity of precipitation in the Sierra and the timing of snowmelt impact the water district's imported water supplies that are conveyed through the Sacramento-San Joaquin Delta. Other factors that impact the water district's water supply include: infrastructure and facility limitations; planned and unplanned facilities outages; contractual obligations; the ability to bring in banked water district supplies from Semitropic Water Storage District; and regulatory, institutional, and legal constraints.

As described in Section 1 of the report, rainfall year 2015–16 began with a below average December in terms of local rainfall. However, above average precipitation has materialized in the month of January. The Northern Sierra 8-Station Precipitation Index total from the beginning of October through the end of January of 2016 was 32.8 inches, which is about 123 percent of the seasonal average to date and 66 percent of an average water year. While the National Weather Service predicts above normal precipitation, consistent with El Niño conditions for almost all of California this winter, it is difficult to predict how the rest of the season will turn out.

The California Department of Water Resources (DWR) announced an initial 2016 allocation of ten (10) percent of contract amounts for the SWP supply and later increased it to fifteen (15) percent on January 26, 2016. The

United States Bureau of Reclamation (USBR) is expected to announce initial CVP allocations in mid or late February 2016. The initial allocations are subject to change as the water year progresses.

Local surface water supplies have been reduced because of the loss in water district reservoir storage capacity due to regulatory restrictions to address seismic concerns. Regulatory restrictions at Anderson Reservoir, the largest water district-owned surface reservoir, have resulted in the loss of about 30 percent of its original storage capacity.

Table 2-2.1 reflects the probable range of local and imported surface water supplies the water district currently expects in calendar year 2016. In conjunction with surface water supplies, groundwater reserves are managed to supplement available supplies during dry periods and to ensure that there are adequate supplies to meet current and future demand. The strategy will be continuously updated throughout the year to account for operations to-date and real-time conditions.

Table 2-2.1 Projected Calendar Year 2016 - Range of Surface Water Supply

Projected Calendar Year 2016 Supply in Acre-Feet		
	Average Year	Dry Year
Imported Water[1]	76,500 – 98,500	44,500 – 52,500
Local Surface Water[2]	65,000	16,000
Total	**141,500 – 163,500**	**60,500 – 68,500**

1. Imported Water Supplies are based on a range of SWP allocations provided during the January 22, 2016 Water Operations meeting. It also assumes a 0% allocation for CVP agriculture (Ag) and 25% allocation for CVP municipal & industrial (M&I). Transfers, exchanges, banking, and carryover are not included as it is unknown at this point which of these supplies are needed for the upcoming year.
2. Local supplies assume a full year of average or dry year conditions, respectively.

Long-Term Projected Demand and Water Supply

Water Demand

The Association of Bay Area Governments projected in 2013 that the population of the county will increase from 1,781,642 in 2010 to 2,303,500 by the year 2035. Jobs are projected to increase from about 0.9 million in 2010 to about 1.2 million in 2035. Even though per capita water use continues to decline, the water district estimates that increases in population and jobs will result in an increase in water demands from about 329,000 acre-feet in 2010 to about 423,000 acre-feet in 2035. This demand projection takes into account implementation of planned water conservation programs.

Conservation

The water district and most major retail water providers partner in regional implementation of a variety of water use efficiency programs to permanently reduce water use in the county. As shown in Figure 2-2.1, the year 2035 demand with currently planned conservation programs in place is projected to be approximately 423,000 acre-feet.

The long-term savings goal in the water district Board-adopted 2012 Water Supply and Infrastructure Master Plan (Water Master Plan) is 98,800 acre-feet per year in water savings by 2030. Additionally, the Water Conservation Act of 2009 requires all retail water agencies in the state, with assistance from the water wholesalers, to reduce per capita water use 20 percent by 2020. To achieve these aggressive long-term goals, the water district implements nearly 20 different ongoing water conservation programs that use a mix of incentives and rebates, free device installation, one-on-one home visits, site surveys, and educational outreach to reduce water consumption in homes, businesses and agriculture. Recent program expansion includes a new gray water program and increased rebates for turf removal. These programs are designed to achieve sustainable, long-term water savings and are implemented regardless of water supply conditions.

Long-Term Projected Water Supply

Several sources of supply contribute to the water district's ability to meet future demands, including local surface water and natural groundwater recharge, recycled water, supplies delivered to retailers by the SFPUC, and Delta-conveyed imported water supplies:

- Local Surface Water and Natural Groundwater Recharge

  Local surface water supplies are expected to increase over current levels after the water district completes seismic retrofits on several dams so the dams can be operated at full capacity. In addition, the Water Master Plan calls for constructing and rehabilitating pipelines between reservoirs and groundwater recharge ponds and constructing new groundwater recharge ponds. These new and rehabilitated facilities will increase the water district's ability to use local runoff to meet water demands. Natural groundwater recharge is not expected to change over the planning horizon.

- Recycled Water

  Recycled water is a local, reliable source of supply that helps meet demands in normal years and in drought years. Recycled water use is expected to increase in the long-term. The Water Master Plan projects that approximately 30,000 acre-feet of year 2035 demands will be met with non-potable recycled water. In addition, the Water Master Plan includes developing another 20,000 acre-feet per year of advanced treated recycled water for potable reuse by 2030. Recent recycled water planning studies have also identified the potential to develop an additional 25,000 acre-feet per year of potable reuse above the 20,000 acre-feet per year identified in the Water Master Plan. The water district is considering expediting and expanding the potable reuse program identified in the Water Master Plan as part of an Expedited Purified Water Program. As part of the program, several key decisions are scheduled for the next year. These decisions include: 1) determining whether to proceed with direct potable reuse design and construction in advance of State regulations; 2) defining the projects that should be included in the program; 3) determining whether to proceed with a progressive design build or public-private partnership program delivery mode; 4) determining whether to pursue partnerships with other Bay Area water agencies; and 5) determining how to phase program implementation.

- San Francisco Public Utilities Commission (SFPUC)

  SFPUC supplies to common retailers reduce demands on water district supplies in northern Santa Clara County. Most of the common retailers have supply guarantees from SFPUC that are not expected to change over time. However, two retailers (the City of San Jose and the City of Santa Clara) have interruptible contracts. San Francisco is scheduled to make a decision about whether to provide supply guarantees to these water retailers by 2018.

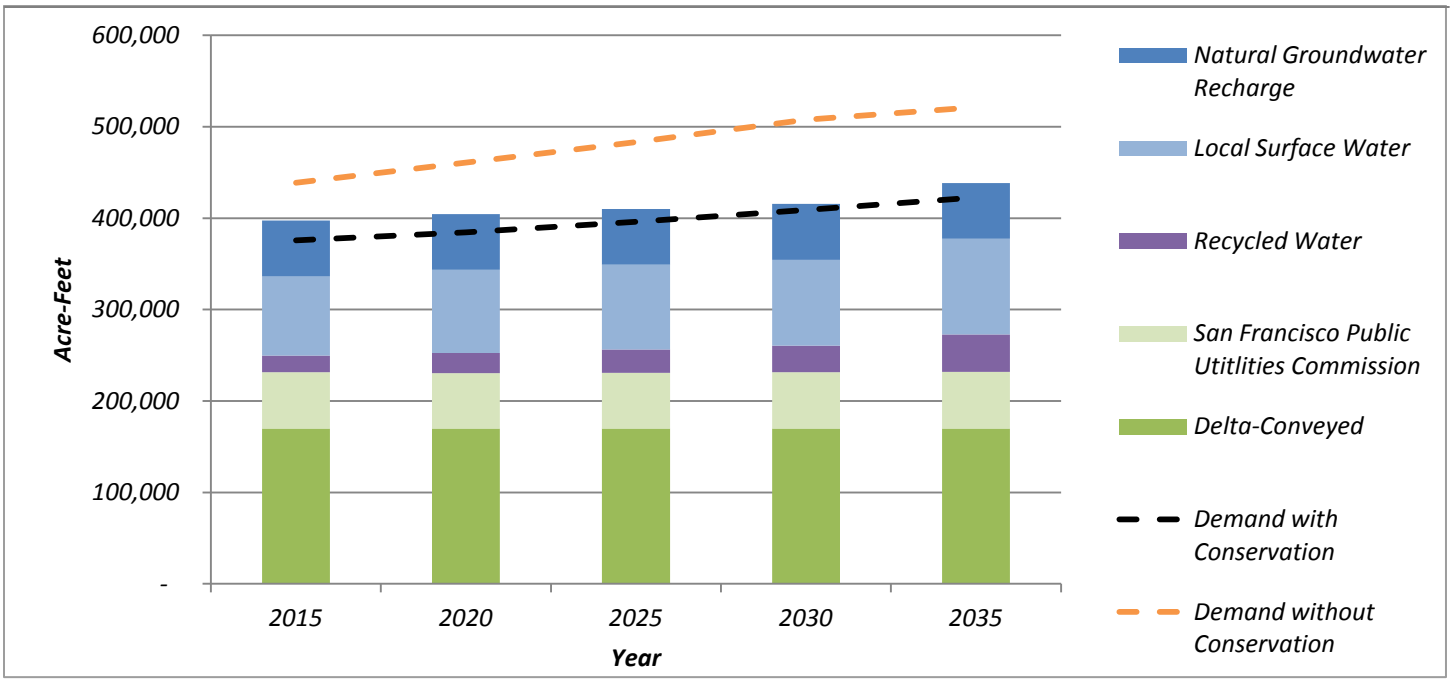
- Delta-Conveyed Imported Water

  The water district holds contracts with the California Department of Water Resources and U.S. Bureau of Reclamation for up to 252,500 AF per year of supplies, with actual deliveries subject to availability of water supplies and satisfaction of regulatory constraints to protect fish, wildlife, and water quality in the

Delta. These Delta-conveyed imported water deliveries from the SWP and CVP have been negatively impacted by significant restrictions on Delta pumping required by the biological opinions issued by the U.S. Fish and Wildlife Service (FWS, December 2008) and National Marine Fisheries Service (NMFS, June 2009). Based on modeling projections provided by the California Department of Water Resources, future average imported water deliveries could decrease with additional regulatory restrictions and impacts from climate change, or could remain at about their current levels with potential for increasing if actions are taken to address challenges in the Delta. The State's EcoRestore Program and California Water Fix project are intended to improve both the Delta ecosystem and water conveyance through Delta, respectively, in an effort to stabilize and improve Delta-conveyed supplies. However, both of these projects are in their initial phases. In particular, decisions by water agencies to support the California Water Fix have not been made, and additional work is needed to complete the environmental analysis. Until there is more certainty associated with the status of Delta planning projects, the extent of additional regulatory restrictions, and impacts from climate change, the water district is currently assuming that average imported water deliveries will remain constant over the planning horizon.

Figure 2-2.1 shows projected average supplies and demands through year 2035. The projection assumes existing supplies and infrastructure are maintained and that the Water Master Plan is fully implemented. In this case, average water supplies will be sufficient to meet future water demands.

Figure 2-2.1 Average Supply & Demand Comparison, Santa Clara County



Reserves

The Water Master Plan also evaluated water supply conditions during multiple dry-year periods (extended droughts). Santa Clara County, like the rest of California, experiences drastic changes in annual precipitation. The variation in precipitation, both locally and in the northern California watersheds, results in fluctuations in the amount of water supply available from year to year. In many years, annual supplies exceed demands, while in some years, like we are currently experiencing, demands can greatly exceed supplies. As part of its

conjunctive management program, the water district compensates for this supply variability by storing excess wet year supplies in the groundwater basin, local reservoirs, San Luis Reservoir, and Semitropic Groundwater Bank. The water district draws on these reserve supplies during dry years to help meet demands. These reserves are generally sufficient to meet demands during a critical dry year and the first few years of an extended drought. With full implementation of the Water Master Plan, the water district anticipates that supplies would be sufficient to meet at least 90 percent of demands during an extended drought.

2-3 CONCLUSIONS, FINDINGS AND CHALLENGES TO FUTURE WATER SUPPLY AVAILABILITY

Future Water Supply Reliability

The water district must make investments in securing existing water supplies and infrastructure, optimizing the use of existing supplies and infrastructure, and increasing recycling and conservation in order to provide a reliable future water supply. The Water Master Plan presents the water district's strategy for developing the needed water supplies, providing a reliable water supply for Santa Clara County under normal and drought conditions and responding to future challenges and risks.

Future Challenges and Risks

Droughts

Droughts are the water district's greatest water supply challenge. Single year droughts can impact the water district's ability to maintain a groundwater recharge program. Multi-year droughts deplete reserves and can result in groundwater level declines and the risk of land subsidence. The water district's conjunctive management program mitigates this risk, but needs to be supported with continued investments in the water district's existing water supply system, increased water conservation, and the expansion of recycled water.

Delta-Conveyed Imported Water Supplies

The water district's Delta-conveyed imported water supplies are at risk from increased regulatory restrictions, Delta levee failure, and climate change. To mitigate these risks and improve the reliability of its imported water supplies, the water district participates with state and federal agencies, other water contractors, and environmental organizations in long-term planning efforts to improve Delta conveyance and ecosystem restoration. The goals of these planning efforts are to protect and restore both water supply reliability and the ecological health of the Delta. Water supply benefits generally fall into three categories: 1) reduced regulatory risk and improved long-term average water supply reliability (or avoided loss of long-term average water supply); 2) reduced risk of prolonged imported water supply interruption or curtailment due to seismic events, climate change, and sea level rise; and 3) improved quality of imported water conveyed through the Delta, and reduced salt loading to the groundwater basin.

Climate Change

Potential impacts of climate change include decreases in imported water supplies as a result of reduced snow pack, a decrease in local surface water supplies as a result of reduced precipitation and shifts in the timing of runoff, more frequent and severe droughts, increases in seasonal irrigation demands, shifting in the timing of runoff, sea level rise, and changes in local and imported water quality. The water district's water supply strategy is intended to adapt well to future climate change by managing demands, providing drought-proof supplies, and increasing system flexibility in managing supplies.

Other Risks and Uncertainties

Other risks and uncertainties to water supply include: fisheries protection measures, random occurrences of hazards and extreme events resulting in local and/or imported water outages, more stringent water quality standards, water quality contamination, SFPUC changes in contracts with local water retailers, and demand growth greater than projected.

Investment Needs

The water district manages and addresses risks and uncertainties by building and maintaining an integrated and diverse water supply system. The water supply system that exists today will continue to meet most of the county's future water needs and is the foundation of future water supply investments. Thus, securing existing water supplies and infrastructure is critical to water supply reliability. The water district needs to continue to be vigilant in protecting the groundwater basins from overdraft and contamination, mitigating risks to imported and local supplies, expanding water conservation and recycling, and maintaining and replacing the aging water supply infrastructure. These infrastructure investment needs will be further discussed in Section 3 of this report.

3-1 ACTIVITIES TO PROTECT AND AUGMENT WATER SUPPLIES OF THE DISTRICT

Groundwater production charges and other water charges finance a program of activities to protect and augment water supplies of the water district. The program is comprised of activities and service functions in the areas of operations, maintenance and construction, as illustrated in Table 3-1.1. These activities are designed to work together to meet water district Board-adopted end goals and policies as well as to provide benefits to the community.

Table 3-1.1 Program Activities to Manage and Provide a Sustainable Water Supply

Activities to Protect & Augment Water Supplies		End Goals & Benefits
Operation	**Services and Functions** • Planning & development • Water purchases • Transmission • Treatment • Distribution • Storage • Groundwater recharge • Conservation & water recycling • Regulatory compliance and mitigation	• Reliable, clean water supply for current and future generations • Delivery of reliable high quality drinking water • Sustainable water supply through integrated water management • Assets and resources managed for efficiency and reliability • Healthy, safe and enhanced quality of living in Santa Clara County
Maintenance	• Surface water & groundwater resources protection & management • Asset protection & management	
Construction	• Capital improvement • Infrastructure management	

Revenue from groundwater production charges and treated water charges constitute the majority of funds needed to finance the operations costs of the Water Utility. Almost a third of the operating budget[1] is needed for imported water purchases to augment local supplies. About a quarter of the operating budget is needed to provide treated water to augment groundwater supply in meeting water demand. The balance is used to provide program services including conjunctive management and protection of surface and groundwater resources, operation and maintenance of facilities, water conservation, planning and development of recycled water and other alternative sources of supply, as well as administrative and support services.

Water district managed water use in FY 2014–15 is estimated at 237,000 acre-feet, which is significantly lower than the prior year actual of 284,800 acre-feet. The lower water usage was in large part due to the public's response to the Board's calls for short term reductions, and their adoption in March 2015 of a restriction on outdoor watering of ornamental landscapes or lawns with potable water to two days a week. The Board

[1] The budget document is available on the water district website: www.valleywater.org

recently extended the call for 30% reduction in water use, relative to calendar year 2013, until June 30, 2016. Accordingly, water usage for FY 2015–16 is anticipated to drop to roughly 205,000 acre-feet.

Because of scarce surface water supplies, the water district operated a limited groundwater recharge program in FY 2014–15, and is continuing to do so in FY 2015–16. On March 25, 2015, based on the Board's call for 30% reduction in water use, the water district reduced contracted treated water deliveries to 80% of the originally contracted amount. This reduction will be in place through June 30, 2016. However, due to the increased risk of land subsidence in certain areas and the availability of additional surface water, effective May 1, 2015 the water district made non-contract treated water available up to 20% of the original contract amount, with the expectation that retailers would directly offset their groundwater pumping by the same amount. The water district was able to meet the adjusted treated water demands with no water quality violations in FY 2014–15. Surface water deliveries have ceased for all but a few surface water users throughout 2015. Water conservation program services and outreach activities were significantly enhanced in response to the drought. The Board has budgeted over $22 million in the last two fiscal years combined (FY 2014–15 and FY 2015–16) for the landscape rebate program to install more efficient irrigation equipment and to convert turf into drought tolerant landscaping. The water district typically spends about $5 million per year on the entire conservation program.

The asset management program and maintenance activities continued, including work at the water district's water treatment plants, pipelines, and pump stations. In addition, the drought provided an opportunity to maintain facilities that are typically under water. Many of the water district's percolation ponds and other recharge facilities were rehabilitated in FY 2014–15. Due to limited local and imported water supplies, the water district has not been able to operate a full recharge program. Therefore, it is difficult to make a direct comparison of how well all of the ponds are operating before and after the maintenance. However, staff estimates that the maintenance work at the recharge ponds could potentially improve recharge efficiency by up to 3 times depending on a variety of factors, such as underlying material, geographical conditions, amount of water being processed, continued use of the facility, and quality of source water. The drought underscores the importance of having well maintained, up-to-date facilities so that water can be properly managed in the county.

Water district staff have continued to participate in development of the California WaterFix project, anticipating that if the water district participates in the project, the reliability and water quality of its supplies conveyed through the Delta will improve. Water district staff are also supporting the state's EcoRestore program, which will contribute towards a sustainable Delta ecosystem.

3-2 FUTURE CAPITAL IMPROVEMENT, OPERATING AND MAINTENANCE REQUIREMENTS

For FY 2016–17, as well as the decades ahead, the highest priority work of the water district's Water Utility is to implement a program of activities to ensure reliable water supplies both now and in the future, to protect local surface water and groundwater supplies, and to meet treated water quality standards. This program of operations, maintenance and capital improvement activities will require continued funding from groundwater production charges and other sources of revenue, as described in Section 4 of this report.

The proposed FY 2016–17 operations and capital programs, as shown in Tables 4-5.1 and 4-5.2, continue to emphasize activities to protect and maintain existing water supplies and assets, and to plan for uncertainties including hydrologic conditions and regulatory restrictions on imported and local supplies. The proposed programs, if funded accordingly, will enable the Water Utility to provide reliable water supplies in the next year

as well as in the future. Specific details about the operations program can be found in "The 5-Year Water Utility Enterprise Operations Plan".[2]

The current capital program is largely composed of asset renewal and improvement projects that have been identified through the water district's asset management program. Maintaining existing assets provides the foundation for meeting current and future supply needs. Dam seismic retrofits and the Rinconada Water Treatment Plant facility renewals and reliability improvements are the largest of the asset renewal projects in the current capital program. Some highlights of the proposed FY 2016–17 capital program are listed next.

Storage:

- Seismic retrofit of Anderson, Calero, and Guadalupe Dams
- Seismic evaluations of Coyote, Chesbro and Uvas Dams
- Rehabilitation of Almaden Dam outlet works

Transmission:

- Raw and treated water pipeline rehabilitation
- Penitencia Delivery Main/Force Main Seismic Retrofit

Water Treatment Plants:

- Seismic retrofits of operations buildings
- A 5-year makeover of the Rinconada Water Treatment Plant processes to ensure plant reliability for the next 50 years; this will include the addition of fluoridation facilities.
- Construction of fluoridation facilities at the water district's two other surface water treatment plants

Recycled and Purified Water:

- Finalize the components of the Expedited Purified Water Program and establish a schedule of Program implementation. The proposed components include: 1) Ford Recharge Ponds Indirect Potable Reuse (IPR); 2) Mid-Basin Injection Wells IPR; 3) Los Gatos Recharge Ponds IPR; and 4) Westside Injection Wells IPR or Center Pipeline Direct Potable Reuse.
- Expansion of the recycled water pipeline system in Gilroy to increase usage by approximately 33% or from 2,000 to 3,000 acre-feet per year.
- Completion of the Wolfe Road Recycled Water Facilities project (pipeline, pump station, and related appurtenances) in partnership with the City of Sunnyvale, Cal Water and Apple Inc. to provide approximately 560 acre-feet per year of additional recycled water use in Sunnyvale and Cupertino.

Detailed cost projections for the preliminary FY 2017–21 Capital Improvement Program (CIP) can be found in Section 4-5.

The seismic stability evaluations of Anderson, Almaden, Calero, Lenihan, Stevens Creek and Guadalupe Dams have been completed and the resulting CIP projects are planned and budgeted. The seismic stability evaluation for three remaining dams, Coyote, Chesbro and Uvas, was initiated in the fall of 2014; the findings may require seismic retrofit work at these locations in the future. In addition to seismic retrofit improvements at the above-listed dams, the conditions of the outlet system, and the adequacy of the spillway and freeboard are being evaluated, and will be incorporated into the retrofit work as appropriate. With operating restrictions on a number of water district dams due to seismic deficiencies or questions about seismic adequacy, there may be impacts to current and future operating budgets, such as the need to purchase additional water because of an inability to capture and utilize local runoff or store imported water.

[2] The 5-Year Water Utility Enterprise Operations Plan can be accessed at: www.valleywater.org/2016-17GroundwaterChargeProcess

Additional future capital and operating improvements arise from Water Utility planning work. The water district's 2012 Water Supply and Infrastructure Master Plan identifies a future water supply strategy that includes: 1) investing in existing supplies and infrastructure; 2) optimizing the use of existing supplies and infrastructure; and 3) increasing recycling and conservation. The current capital program supports this strategy as it is largely centered on protecting existing supplies and infrastructure. Operating budget impacts related to implementing this strategy are primarily related to planning for expansion of recycled water. Specific future capital projects related to this strategy include restoration of the Main Avenue and Madrone pipelines, additional off-stream recharge, and new advanced recycled water treatment and distribution facilities.

Another expected impact on future operating and capital budgets is the cost to meet requirements associated with the anticipated modified water rights order that will specify changes in operations and infrastructure improvements necessary to fulfill the Fisheries and Aquatic Habitat Collaborative Effort (FAHCE) Fish Habitat Restoration Plan.

The FAHCE Fish Habitat Restoration Plan arose from a water rights complaint together with the 1996 listing of steelhead trout as a threatened species under Federal Endangered Species Act (ESA)[3] by National Marine Fisheries Service (NMFS). Water district staff continue to work diligently to resolve the water rights complaint.

Implementation of the FAHCE Fish Habitat Restoration Plan will require a large financial commitment on the part of the water district for capital, operating and maintenance budgets for 50 years. Costs have been estimated, but have not been completely integrated into the groundwater production charge projections, pending finalization of the FAHCE Plan.

[3] The Endangered Species Act (ESA) is a federal law to ensure the conservation of threatened and endangered plants and animals and the habitats in which they are found. The ESA prohibits "take" of listed species through direct harm or destruction or adverse modification of designated critical habitat of such species. In the 1982 ESA amendments, Congress authorized the federal ESA implementing agencies, U.S. Fish and Wildlife Service and National Marine Fisheries Service, through the Secretary of the Interior, to issue permits for the "incidental take" of listed species before permittees could proceed with an activity that is legal in all other respects but would result in the incidental taking of a listed species. Prior to issuance of "take" permits, permit applicants are required to design, implement, and secure funding for a conservation plan that minimizes and mitigates harm to the impacted species during the proposed project. That plan is commonly called a Habitat Conservation Plan (HCP). HCPs are legally binding agreements between the U.S. Secretary of the Interior or Commerce and the permit holder.

The California Endangered Species Act (CESA) is the state equivalent of the federal ESA. It states that all native species and habitats of fishes, amphibians, reptiles, birds, mammals, invertebrates, and plants threatened with extinction and those experiencing a significant decline which, if not halted, would lead to a threatened or endangered designation, will be protected or preserved. CESA also allows for take incidental to otherwise lawful development projects. The state Department of Fish and Game is the CESA implementing agency, authorized to issue permits and memorandum of understanding.

4-1 INTRODUCTION

This section summarizes the maximum proposed charges for fiscal year (FY) 2016–17 and the multi-year financial analysis that serves as the foundation for those water charges in each zone. The major sources of revenue for the Water Utility are from the imposition of charges on groundwater production and from contracts for the sale of treated surface water produced by its three treatment plants. The water district also receives revenue from surface water charges, recycled water charges, property tax, interest earnings, grants, capital reimbursements and other sources. The water district assesses the need for groundwater production and other water charges annually and, in accordance with state law, prepares this report to describe the activities undertaken to provide a water supply, along with the associated capital, maintenance, and operating requirements.

The Rate Setting Process

According to Section 26.3 of the water district's founding legislation (District Act), proceeds from groundwater production charges can be used for the following purposes:

1. Pay for construction, operation and maintenance of imported water facilities
2. Pay for imported water purchases
3. Pay for constructing, maintaining and operating facilities which will conserve or distribute water including facilities for groundwater recharge, surface distribution, and purification and treatment
4. Pay for debt incurred for purposes 1, 2 and 3

The work of the water district is divided into projects. Every project has a project plan which is prepared by the project manager. The project plan is a detailed description of the project including objectives, milestones, and an estimate of resources needed to deliver the project. To ensure compliance with the District Act, each project plan contains a justification as to whether or not groundwater production charges can be used to pay for the activities associated with it. The financial analysis presented in this report is based on these project plans.

This year's groundwater production and surface water charge setting process will be conducted consistent with the District Act, Board Resolutions 99-21, 12-10 and 12-11[1], as well as Proposition 218's requirements for property-related fees for water services. The water district maintains that the groundwater production and surface water charges are not legally subject to Proposition 218 requirements. Whether legally bound or not, the water district is committed to a transparent water charge setting process.

The water district has conducted a formal protest procedure of the proposed groundwater production charge increase for the past six years and of surface water charges for the past four years. Last year, the results of the groundwater production charge protest procedure were that in the North County Zone W-2, no more than 1.2 percent of well operators or property owners protested the proposed groundwater production charges, while in the South County Zone W-5, no more than 4.7 percent of well operators or property owners protested. There was one protest by a South County surface water account holder. FY 2016–17 will be the seventh year in which the process includes a formal protest procedure to allow well operators and property owners to decide whether the Board may authorize an increase to the existing groundwater production charges. It will be the fifth year that a protest procedure will be implemented for surface water users. As in the past, the Board will

[1] Resolutions 99-21, 12-10, and 12-11 can be found at http://www.valleywater.org/2016-17GroundwaterChargeProcess

continue to hold public hearings and seek input from its advisory committees and the public before rendering a final decision on groundwater production and surface water charges for FY 2016–17.

In late 2009, the water district engaged Raftelis Financial Consultants, Inc. (RFC) to review the water district's cost of service and rate setting methodology used to calculate groundwater production charges for FY 2010–11. At that time, RFC had conducted over 600 rate and financial planning studies for water and wastewater utilities across the country. Specifically, RFC reviewed the cost of service and financial planning model developed by the water district to calculate groundwater production charges for FY 2010–11. RFC reviewed the water district's rate setting methodology for consistency with industry standards, best practices, and legal considerations such as Proposition 218, the District Act, and Resolution 99-21. The methodology used to calculate groundwater production charges for FY 2010–11 is detailed in RFC's report titled "Review of the Santa Clara Valley Water District's Cost of Service and Rate Setting Methodology for Setting FY 2011 Groundwater Production Charges"[2]. The report was completed in March 2010 and demonstrates that the water district developed groundwater production charges and other charges consistent with cost of service principles and legal considerations including Proposition 218, the District Act, and Resolution 99-21. The water district will use the same cost of service methodology for the FY 2016–17 rate setting process.

In 2010, the water district engaged RFC and the water resources engineering firms of Hydrometrics Water Resources and Carollo Engineers to further analyze and quantify the conjunctive use benefit of treated water to groundwater and surface water customers. In addition, RFC analyzed the benefits of agricultural water usage to M&I users. The report titled "Report Documenting the Reasonableness of the Conjunctive Use Benefit of Treated Water to Groundwater and Surface Water Customers and the Benefit of Agricultural Customers to Municipal and Industrial Customers"[3] was completed in February 2011 and provides further support and justification for the water district's cost of service methodology.

In 2014, the water district engaged RFC once again to analyze and quantify the conjunctive use benefit of surface and recycled water to groundwater customers. The report titled "Report Documenting the Reasonableness of the Conjunctive Use Benefit of Surface Water and Recycled Water to Groundwater Customers"[4] was completed in February 2015 and provides further support and justification for the water district's cost of service methodology.

Overview of Customer Classes and Charges

As the wholesale water provider for Santa Clara County, the water district serves 4 customer classes including, groundwater users, treated water users, surface water users and recycled water users. Resolution 99-21 guides staff in the development of the overall pricing structure based on principles established in 1971. The general approach is to charge the recipients of the various benefits for the benefits received. More specifically, pricing is structured to manage surface water, groundwater supplies and recycled water conjunctively to prevent the over use or under use of the groundwater basin. Consequently, staff is very careful to recommend pricing for groundwater production charges, treated water charges, surface water charges and recycled water charges that work in concert to achieve the effective use of available resources (as supported by the 2010 RFC study).

[2] The initial RFC report, dated March 5, 2010 can be found at http://www.valleywater.org/2016-17GroundwaterChargeProcess
[3] The second RFC report, dated February 17, 2011 can be found at http://www.valleywater.org/2016-17GroundwaterChargeProcess
[4] The third RFC report, dated February 27, 2015 can be found at http://www.valleywater.org/2016-17GroundwaterChargeProcess

Groundwater users pump water from the ground that is both naturally and artificially recharged into the groundwater basin. The groundwater production charge recoups the water district's costs to protect and augment this source of water, as outlined in the District Act.

Treated water users are comprised of 7 retail water companies that take treated surface water from one of the water district's 3 treatment plants and sell it to their end user customers. The water comes from locally captured runoff or water imported into the county. The water district recoups the cost of providing treated water by charging users the basic user charge, which is set equivalent to the groundwater production charge, and a treated water surcharge. The provision of treated water helps preserve the groundwater basin and therefore benefits groundwater users. This fact provides the rationale for setting the basic user charge equal to the groundwater production charge in accordance with cost of service principles as justified by the 2011 RFC study. The treated water surcharge is set by Board policy at an amount that promotes the effective use of available water resources.

Surface water users are those users permitted by the water district to tap raw district-managed surface water from creeks, streams or pipelines. To the extent the water district releases water from its reservoirs that is non-natural flow, the water district considers this to be surface water, which is not subject to diversion by third parties. Non-natural flow reservoir releases and imported water are made available to water district surface water permittees. Surface water users pay the basic user charge, which is set equivalent to the groundwater production charge, plus a surface water master charge. The basic user charge helps pay for the cost to manage and augment surface water supplies and is set equal to the groundwater production charge, as justified by the 2015 RFC study, because surface water is considered in-lieu groundwater usage. The surface water master charge pays for costs that are specific to surface water users only, including the work to operate surface water turnouts, and maintain surface water accounts.

Recycled water users are those users who take purified wastewater for irrigation purposes. Recycled water is an all weather supply. Recycled water charges are established at rates that maximize cost recovery while providing an economic incentive to use recycled water. The provision of recycled water helps preserve the groundwater basin and therefore benefits groundwater users. Consequently, groundwater users pay for recycled water to the extent that recycled water charges do not achieve full cost recovery, as justified by the 2015 RFC study.

Agricultural water users are a subset of the groundwater, surface water and recycled water customer classes. Section 26.1 of the District Act defines agricultural water use as "water primarily used in the commercial production of agricultural crops or livestock." Agricultural charges are limited to a maximum of 25% of non-agricultural charges per the District Act. Board policy further limits agricultural charges to no more than 10% of non-agricultural charges in order to help preserve open space. Non-rate related revenue is used to offset lost agricultural water revenue for each customer class and is referred to as the Open Space Credit. Non-agricultural users (also referred to as Municipal and Industrial users) are a subset of all 4 customer classes and consist of all water use other than agricultural. Non-agricultural water use charges are established for each customer class as described in the preceding paragraphs.

4-2 THE WATER CHARGE RECOMMENDATIONS FOR FISCAL YEAR 2016–17

Last year, FY 2015–16, the Board chose to increase groundwater production charges in both zones of benefit. In the North County Zone W-2, the Board adopted a groundwater production charge of $894 per acre-foot for non-agricultural water, $21.36 per acre-foot for agricultural water, and $994 per acre-foot for contract treated water. In the South County Zone W-5, the Board adopted a $356 per acre-foot groundwater production charge for non-agricultural water, and a $21.36 per acre-foot groundwater production charge for agricultural water.

Staff has developed a FY 2016–17 groundwater production charge scenario, which is higher than the prior year projection due to the continued historic drought. This higher projection is driven by the following reasons. First, the water district is anticipating increased drought-related operations costs (e.g., $5 million for a Semitropic water bank take, and $7 million for higher Central Valley Project imported water contract costs offset by $4 million for lower imported water transfer agreement costs). These costs are essential to maintaining a healthy groundwater basin, avoiding the serious consequences of overdrafting of the groundwater basin and risking land subsidence, and assuring that the supply of safe, clean water for essential uses is not interrupted.

Second, staff is assuming lower water usage for FY 2016–17 than the prior year projection due to the most recent actual trend. For FY 2016–17 staff is assuming 205,000 AF of water use versus 239,000 AF in the prior year projection. This represents a 28% water use reduction relative to Calendar Year 2013 and translates to approximately $33 million reduced revenue relative to the prior year projection.

While the draft FY 2017–21 Capital Improvement Plan (CIP) is slightly higher ($4 million) for FY 2016–17 than the prior year CIP, the change is not a significant driver of the rate increase. Significant investments planned for FY 2016–17 include:

- $45 million for the Rinconada Water Treatment Plant Reliability Improvements
- $16 million for recycled water pipeline expansion in South County Zone W-5
- $12 million for Dam Seismic retrofits and improvements at Almaden, Guadalupe, and Calero Dams
- $11 million for various pipeline rehabilitation projects

For FY 2017–18 and beyond, the draft CIP is significantly higher than the prior year CIP driven by:

- Accelerating the timing and adding $370 million for Expedited Purified Water Program investments
- A $52 million cost increase for the Guadalupe Dam Seismic Retrofit due to scope refinements
- Adding $100 million for a new 10-Year Pipeline Rehabilitation Program in response to the August 2015 failure of the Santa Clara Conduit
- Adding $17 million for the Coyote Pumping Plant Adjustable Speed Drive (ASD) Replacement

The water district must continue investing significant capital dollars into repairing and rehabilitating the infrastructure required to deliver safe, reliable drinking water to Silicon Valley residents and businesses. The water district is projecting rate increases over the next 10 years in order to significantly invest in several key areas:

- $1.1 billion over the next 10 years for repair, rehabilitation and seismic retrofitting of the system behind your water supply, including treatment plants, pipelines, pump stations, dams and recharge ponds.
- $122 million over the next 10 years to solve the statewide issue of the Bay Delta, where 40 percent of our water supply travels through. A catastrophic event in the Delta could interrupt this vital supply of water to Santa Clara County for up to two years or more.

- $940 million to develop new supplies that help ensure future sustainability. Recently completed planning efforts show that additional water supply investments will be needed in the future to accommodate and support the local economy and population.

The increase for FY 2016–17 will bring in revenue required to cover drought response expenses, rising operating costs, and to pay for critical investments in the water supply infrastructure, imported water supply reliability and future supplies. The effective management of the region's water supply system includes securing imported water supplies, storage in surface water reservoirs, replenishment and protection of our groundwater basin, purification at local water treatment plants, testing for consistent water quality, transport and delivery of water to local water providers, and conservation programs.

To minimize the FY 2016–17 rate increase the water district has scaled back drought response activities from $36.3 million in FY 2016–17 to $9.6 million in FY 2016–17 in light of the excellent community response toward achieving the Board's call for 30% conservation. In addition, the water district is currently working on refunding outstanding debt which is anticipated to generate $3 million in debt service savings for FY 2016–17. The water district continues to evaluate its programs for additional cost efficiencies. For example, the Pipeline Maintenance team invested in a new gasket cutting machine in 2015, which will save the water district approximately $72,000 per year, and better equip staff to respond to emergencies when specialty gaskets are needed for pipes, pumps, valves, etc... In addition, the water district used temporary labor to ramp up conservation and water waste inspection programs, instead of hiring more expensive permanent or contract employees. Cost reduction opportunities are more difficult to come by given the cost saving achievements over the past few years, including the elimination of 101 positions water district-wide since 2008.

Given the financial picture summarized above, staff proposes the following maximum water charges for FY 2016–17:

In the North County Zone W-2, staff proposes a maximum 23.6 percent increase, or $1,105 per acre-foot groundwater production charge for non-agricultural water; 11.8 percent increase, or $23.89 per acre-foot for agricultural water; 21.2 percent increase, or $1,205 per acre-foot for contract treated water; and 19.3 percent increase or, $1,305 per acre-foot for non-contract treated water. Of the 23.6 percent increase, 12.8 percent was planned last year, and 10.8 percent is driven by the drought. The average household would experience an increase in their monthly bill of $7.27 or about 24 cents a day.

In the South County Zone W-5, staff proposes a maximum 11.8 percent increase to both non-agricultural and agricultural water. This results in a $398 per acre-foot groundwater production charge for non-agricultural water, and $23.89 per acre-foot groundwater production charge for agricultural water. Of the 11.8 percent increase, 5.9 percent was planned last year and 5.9 percent is driven by the drought. The average household would experience an increase in their monthly bill of $1.44 or about 5 cents per day.

Staff recommends increasing the surface water master charge by 21.5 percent, from $22.60 per acre-foot to $27.46 per acre-foot, in order to bring revenues in closer alignment with the costs related to managing, operating and billing for surface water diversions.

For recycled water, staff recommends increasing the M&I charge by 12.5 percent to $378 per acre-foot. For agricultural recycled water, staff recommends a 5.6 percent increase to $47.68 per acre-foot. This increase maximizes cost recovery while concurrently providing an economic incentive to use recycled water.

Figure 4-2.1 illustrates the multi-year groundwater production charge projection. It reflects a range of potential groundwater production charges over the next ten years depending on the level of service to be provided. The high end of the range (line immediately above the shaded areas) represents the groundwater production charges required to fund all of the operations and capital projects identified by staff to meet the Board's Ends

Policies over the next few years. The potential impacts of not funding the high end of the range include increased risk of: (1) service interruptions; (2) higher corrective maintenance costs to repair facilities that have not been well maintained; and (3) reduced ability to respond to drought. While staff has identified as many projects as possible, there are initiatives and/or potential future uncertainties that could result in the identification of additional capital or operations projects that are not reflected in the high end of the range.

The lower end of the range (line immediately below the shaded areas) represents staff's proposed maximum groundwater production charges for FY 2016–17 and the corresponding future trajectory based on the assumption that operating services will either continue at or below the level budgeted in FY 2015–16. FY 2016–17 includes extraordinary drought response costs. The proposed maximum assumes a higher chance of a wet winter and spring for early 2016 for most of California due to El Niño conditions, and that the public continues to respond well to the Board's call for 30% conservation (compared to 2013 use).

Figure 4-2.1 Ten Year Projection

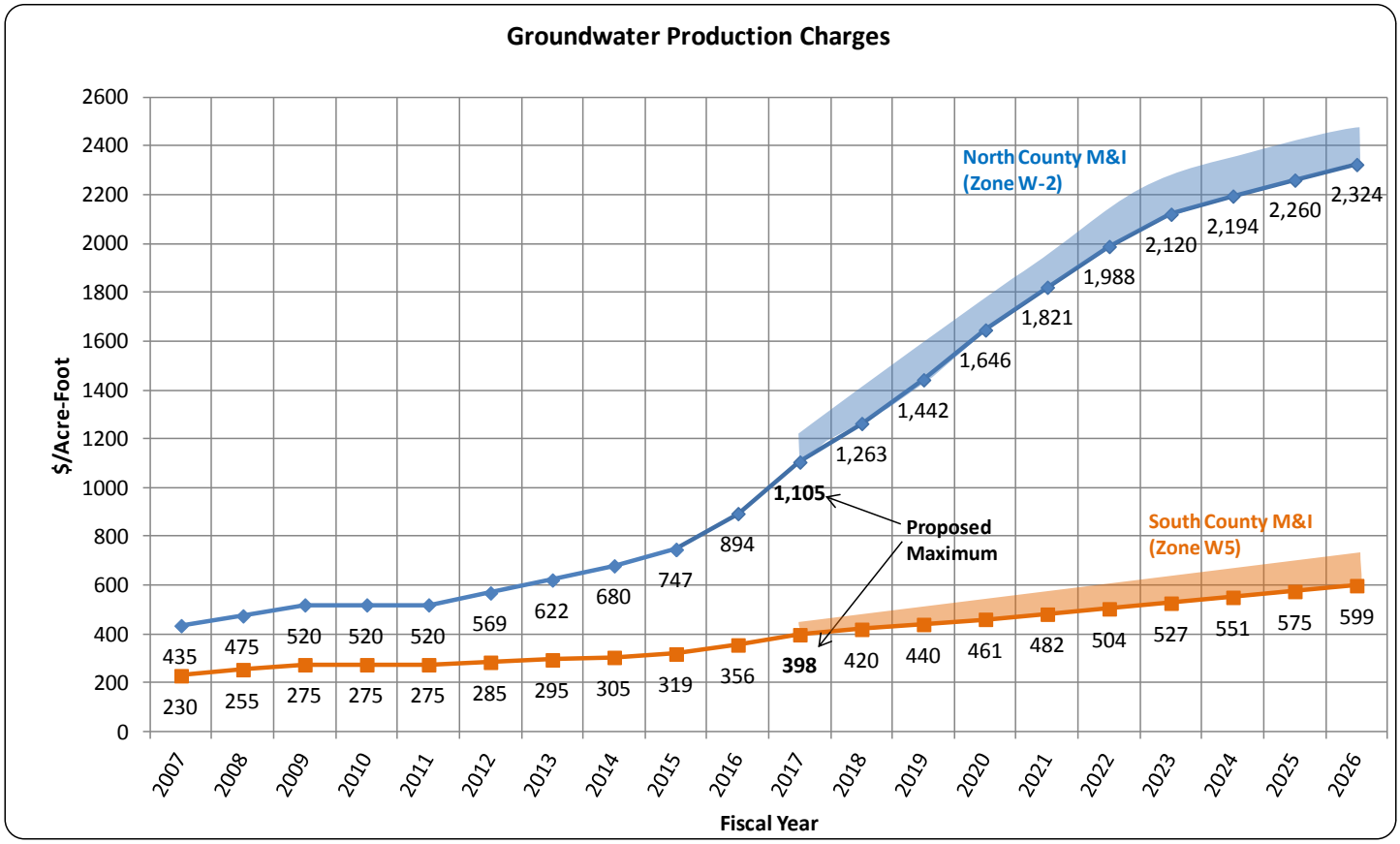


Table 4-2.1 shows groundwater production and other charges in fiscal years 2014–15 and 2015–16. The final column contains the proposed maximum water charges for FY 2016–17, which are in accordance with the pricing policy described in Resolution 99-21.

Table 4-2.1 Summary of Charges (Dollars Per Acre-Foot, $/AF)

	Dollars Per Acre Foot		
	FY 2014–15	FY 2015–16	Proposed Maximum FY 2016–17
Zone W-2 (North County)			
Basic User/Groundwater Production Charge			
Municipal & Industrial	747.00	894.00	1,105.00
Agricultural	19.14	21.36	23.89
Surface Water Charge			
Surface Water Master Charge	18.60	22.60	27.46
Total Surface Water, Municipal & Industrial*	765.60	916.60	1,132.46
Total Surface Water, Agricultural*	37.74	43.96	51.35
Treated Water Charges			
Contract Surcharge	100.00	100.00	100.00
Total Treated Water Contract Charge**	847.00	994.00	1,205.00
Non-Contract Surcharge	150.00	200.00	200.00
Total Treated Water Non-Contract Charge***	897.00	1,094.00	1,305.00
Zone W-5 (South County)			
Basic User/Groundwater Production Charge			
Municipal & Industrial	319.00	356.00	398.00
Agricultural	19.14	21.36	23.89
Surface Water Charge			
Surface Water Master Charge	18.60	22.60	27.46
Total Surface Water, Municipal & Industrial*	337.60	378.60	425.46
Total Surface Water, Agricultural*	37.74	43.96	51.35
Recycled Water Charges			
Municipal & Industrial	299.00	336.00	378.00
Agricultural	42.94	45.16	47.68

*Note: The total surface water charge is the sum of the basic user charge (which equals the groundwater production charge) plus the water master charge

**Note: The total treated water contract charge is the sum of the basic user charge (which equals the groundwater production charge) plus the contract surcharge

***Note: The total treated water non-contract charge is the sum of the basic user charge (which equals the groundwater production charge) plus the non-contract surcharge

Table 4-2.2 shows the components that make up the maximum proposed groundwater production charge increases in both zones of benefit. It also shows the corresponding monthly bill increase.

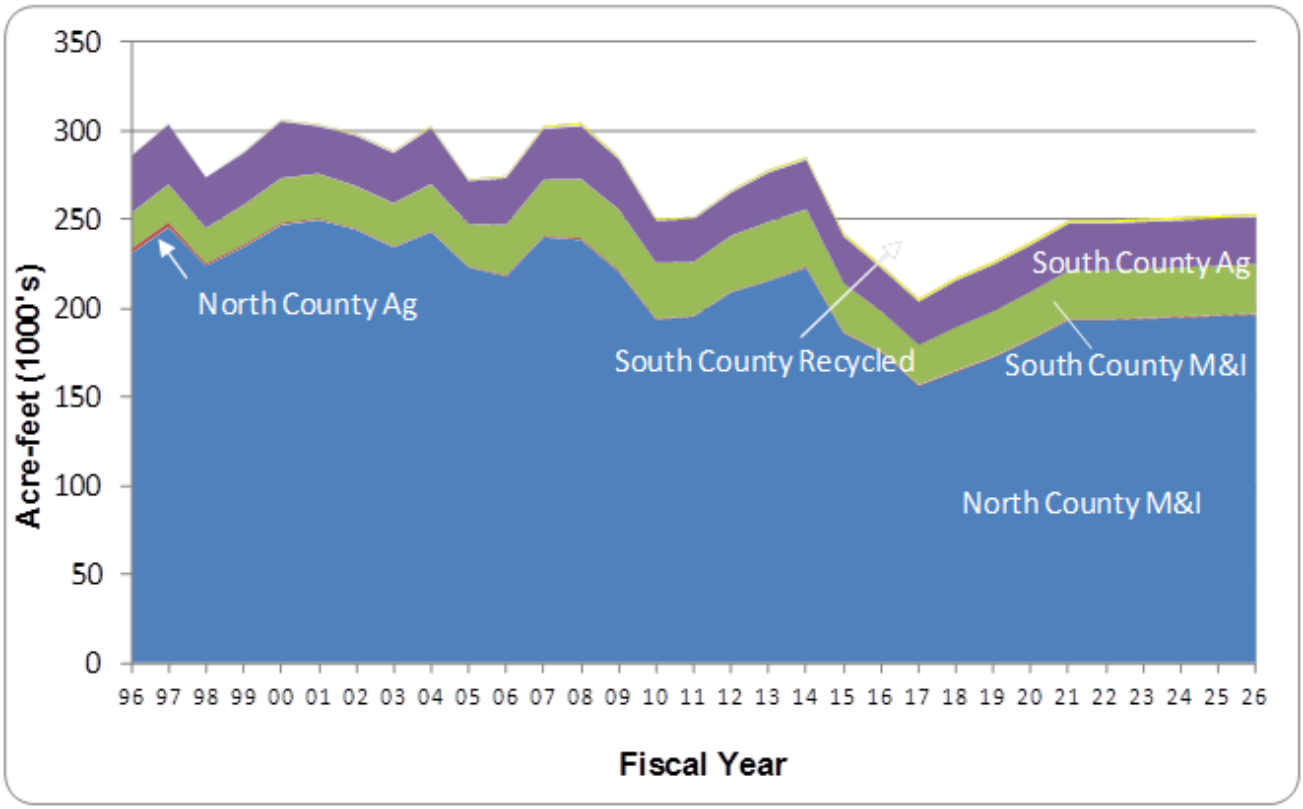
Table 4-2.2 Components of Groundwater Production Charge Increase

	North County	South County
GW Production Charge Increase Components		
FY 17 Planned Increase	12.8%	5.9%
Drought Component	10.8%	5.9%
Total % Increase	**23.6%**	**11.8%**
Monthly Bill Increase*		
FY 17 Planned Increase	$3.93	$0.72
Drought Component	$3.34	$0.72
Total Increase	**$7.27**	**$1.44**

*** Impact of Groundwater Production Charge increase on monthly water bill for the average household based on 1,500 cubic feet of water usage**

Figure 4-2.2 illustrates historical and projected water district water use, which is a key driver of the water district's water revenue. Water usage in FY 2014–15 was estimated at approximately 237,000 AF, which is 23,000 AF lower than budgeted and 48,000 AF lower than the actual water usage recorded in FY 2013–14 of 285,000 AF. The water usage for FY 2015–16 is budgeted at 229,000 AF but the actual is estimated to be 205,000 AF based on year-to-date water usage. For FY 2016–17, staff assumed a water usage projection of 205,000 AF, which is flat to the FY 2015–16 estimated actual, roughly 34,000 acre-feet lower than projected last year, and represents a 28 percent reduction relative to calendar year 2013. Water use is projected to ramp up to 253,000 AF by FY 2025–26.

Figure 4-2.2 Historical and Projected Water District Water Use



4-3 FINANCIAL OVERVIEW OF THE WATER DISTRICT

The water district uses fund accounting to ensure and demonstrate compliance with finance-related legal requirements. Fund accounting allows government resources to be segregated and accounted for according to their intended purposes. Accounts related to activities of the Water Utility are segregated into the Water Utility Funds comprised of the Water Utility Enterprise Fund and the State Water Project (SWP) Fund. For the Water Utility Enterprise Fund, revenue accounts include groundwater production, treated water, property taxes, surface water, interest earnings, reimbursements, grants and other. Cost accounts include both direct and indirect or overhead costs associated with Water Utility projects and activities. The SWP Fund accounts specifically for SWP Tax revenue and SWP contractual costs (Note that SWP Tax revenue can only be spent on SWP contractual costs). Table 4-3.1 shows an overview of the funds at the water district including the Water Utility Funds and the estimated revenues, costs and reserves for FY 2016–17 for each fund. Throughout this report, the term “Water Utility” or “Water Utility Enterprise” refers to the combination of the Water Utility Enterprise Fund and the SWP Fund.

Table 4-3.1 FY 2016–17 Projected Funds Analysis

	Water Utility Funds				
	Water Utility	State Water	Safe, Clean Water	Watershed	Administration
(Millions $)	Enterprise Fund	Project Fund	Fund	Funds	Funds
Revenue	203.8	34.0	58.4	113.8	6.8
Interfund Transfer	(0.4)	0.9	(0.8)	(5.4)	5.6
Ops Costs	(148.9)	(34.1)	(16.3)	(52.8)	(66.7)
Debt Svc	(27.3)	-	(0.2)	(12.2)	(0.5)
Capital	(135.4)	-	(189.8)	(81.4)	(22.7)
Debt Proceeds	128.0	-	158.8	-	-
Intra-District Reimb.[1]	-	-	-	-	69.1
Balance	**19.8**	**0.9**	**10.1**	**(38.0)**	**(8.4)**
Reserves					
Restricted	28.0	-	157.9	-	-
Committed	64.3	-	-	14.2	10.9
Designated Liability	7.4	-	-	-	6.5
Total Reserves	**99.6**	**-**	**157.9**	**14.2**	**17.4**

Notes:

[1] Intra-District Reimbursements represent overhead costs that have been allocated to the Water Utility; Safe, Clean Water; and Watersheds (included in the operations and capital costs for those funds)

The Safe, Clean Water Fund accounts for a 15-year program that was approved by the voters in November, 2012 for the purpose of addressing several community priorities. These priorities include: securing a safe, reliable water supply; protecting our water system from earthquakes and natural disasters; preventing contaminants from entering the water supply; restoring habitat for fish, birds and wildlife and increasing open space; and enhancing flood protection. The primary source of revenue for this fund is a special parcel tax. This fund supports several projects that benefit not only the community at large but also the Water Utility including hazardous materials management, water conservation grants, rebates to remove excess nitrate from drinking water, and stormwater runoff management. Most notably this fund will contribute $66 million toward the Anderson Dam Seismic retrofit project in the form of a reimbursement to the Water Utility Enterprise Fund. It will also apportion some of the revenue towards the Treated Water Pipeline Reliability and Main/Madrone Avenues Pipeline Restoration projects. For more information on the Safe, Clean Water program please visit www.valleywater.org.

The Watershed Funds are a segregated grouping of funds with separate funding sources (including Benefit Assessments and 1 percent ad valorem property taxes) for the purpose of providing flood protection and watershed management.

The Administration Funds include the General Fund, Fleet Fund, Information Technology Fund, and Risk Fund to account for all revenues and expenditures necessary to carry out basic governmental activities of the water district that are not accounted for through other funds. Administration Funds expenditures that are not offset by Administration Funds revenues are allocated to the Water Utility; Safe, Clean Water; and Watershed funds through an overhead rate at the project level.

4-4 WATER UTILITY FINANCES FOR FISCAL YEARS 2014–15 & 2015–16

Fiscal Year 2014– 15

Actual overall revenue for FY 2014–15 was $11.0 million less than the adopted budget of $201.1 million. The revenue shortfall was due primarily to lower groundwater and treated water usage than budget, which comprised $15.9 million of the shortfall. This was offset slightly by $2.0 million of higher property tax revenue and $1.0 million of higher investment income.

Actual operations outlays came in at $169.0 million and were $25.7 million lower than the adjusted budget. The savings were driven by $7.1 million lower debt service due to delaying a planned debt issuance from FY 2014–15 to FY 2015–16, $4.8 million in unspent imported water cost budget, $2.9 million in unspent conservation program budget, $2.4 million for lower water treatment plant operations and maintenance than anticipated, with the remaining cost savings in various other projects.

Unspent capital budget was carried forward to FY 2015–16 consistent with accounting practices.

Fiscal Year 2015– 16

Current estimates for FY 2015–16 show revenue trending at roughly $20.5 million below budget which could vary, depending on the impact of water use reduction measures and whether or not it is a dry or wet spring. Over $4.9 million of budget adjustments for operations have been approved by the Board to address the drought, which will be paid for by a greater than anticipated 1 percent ad valorem property tax. Consequently, staff is anticipating a reduction to discretionary reserves versus budget that would need to be replenished next year.

4-5 OVERVIEW OF OPERATING AND LONG-TERM CAPITAL PLANS

To develop a charge structure that will support planned work, staff analyzes the immediate needs of the water district as well as anticipated requirements in the years to come.

Operating Outlays

Operations costs are projected to increase at an average of 5.0 percent per year over the next ten years. The increase is driven by efforts to respond to the drought, anticipated inflation, cost increases associated with employee salaries and benefits, California Water Fix, efforts to develop new supplies that help ensure future sustainability and rising costs associated with regulatory requirements.

Table 4-5.1 shows the water district's Water Utility operating program for FY 2014–15, FY 2015–16, and projected for FY 2016–17. Specific details about the programs and projects funded within the water utility can be found in "The 5-Year Water Utility Enterprise Operations Plan[5]." The Water Utility Enterprise strives to implement a program that ensures that treated water quality standards are met and that water supplies are reliable to meet current and future demand.

[5] The 5-year Water Utility Enterprise Operations Plan can be accessed at http://www.valleywater.org/2016-17GroundwaterChargeProcess

Table 4-5.1 Operating Budget Summary

		Thousands $			
Cost Center	Ends Policy	Actual FY 15	Adjusted FY 16	Projected FY 17	Description of Cost Centers and Activities
Source of Supply	E-2.1 Current and future water supply for municipalities, industries, agriculture and the environment is reliable	94,516	123,703	109,235	This cost center contains all the anticipated expenditures that relate to obtaining, producing, and protecting a water supply; including all conservation, reclamation, and importation costs. Activities include: groundwater level & quality monitoring; groundwater modeling; dams and reservoir operations & maintenance; imported water supply management; long-term Delta issues resolution; operations and maintenance of San Felipe Reaches 1-3, including mechanical and electrical; operations planning; water rights protection; Urban Water Management Plan; administration of recycled water agreements, technical studies, recycled water rebates; water conservation technical assistance, financial incentives, outreach and education; environmental planning & compliance; well permitting and destruction; Silicon Valley Advanced Water Purification Center operations and maintenance; and habitat conservation and mitigation commitments.
Raw Water Transmission & Distribution	E-2.2 Raw Water Transmission and Distribution Assets Are Managed to Ensure Efficiency and Reliability	9,733	11,016	12,943	This cost center contains all expenditures relating to the distribution of raw water. The distribution system consists of pipelines, canals, and percolation ponds and includes the use of creek systems. Activities include: operations and maintenance of recharge ponds, canals, pipelines & diversions including vegetation management; operations and maintenance of raw water distribution system, including mechanical and electrical; raw water corrosion control; environmental compliance support.
Water Treatment and Treated Water Transmission & Distribution	E-2.3 Reliable High Quality Water is Delivered	32,185	37,900	38,387	These cost centers contain all expenditures associated with the treatment of water at the Rinconada, Penitencia and Santa Teresa Water Treatment Plants, as well as those expenditures related to the distribution of treated water to retail customers and includes costs associated with the treated water reservoirs, pumping plants, pipelines, and turnouts. Activities include: operations and maintenance of 3 water treatment plants; Water District laboratory operations; water quality planning, testing, research, and reporting; operations and maintenance of treated water transmission and distribution system; and recycled water transmission and distribution general maintenance.
Administration & General	Support Services	18,226	21,644	22,440	This cost center contains all expenditures of an administrative nature which cannot be properly assigned to another of the other four cost centers. Activities include: asset protection evaluation and planning; integrated regional water management plan; water system computer modeling; urban runoff pollution prevention; general & division management; performance measures; financial support & water charge setting; customer relations; health and safety training; billing; data maintenance; auditing; meter reading, testing, repair, installation, backflow prevention; emergency services; warehouse and equipment services; real estate services; and ethics & diversity.
	Total Program Requirements	**154,660**	**194,263**	**183,005**	

Capital Improvements Plans

The water district constructs, operates and maintains reservoirs, pipelines, recharge facilities, and water treatment plants that are needed to achieve the Board's Ends Policies. On an annual basis, the water district conducts a process to plan for capital improvements and identify the resource needs and constraints to implement the projects. The result of this process is Board approval of a 5-Year Capital Improvement Program (CIP)[6].

Table 4-5.2 shows the capital projects identified in a preliminary version of the FY 2016–17 CIP and associated expenditures for the next ten fiscal years. The table shows funding nearly $2.1 billion (inflated) worth of capital projects between FY 2016–17 and FY 2025–26. Roughly $940 million of that program is for recycled and purified water expansion, which will provide new drought-proof water supplies to help ensure future water supply reliability. The remaining portion of the capital program is primarily dedicated to asset management of Water Utility Enterprise facilities throughout the county. Staff continues to conduct a validation process as part of the water district's Asset Management Program, to identify if there is a compelling business case for capital projects. All newly-proposed projects will undergo the validation process prior to being proposed for inclusion in the CIP.

[6] The latest CIP can be accessed at www.valleywater.org/CIP.aspx

Table 4-5.2 Capital Improvements Projects – Fiscal Years 2016–17 Through 2025–26

Water Utility CIP FY 2017-26 Sorted by Cost Center (Funded)	Planned Funding with Inflation (Thousands of Dollars)						
Name	FY17	FY18	FY19	FY20	FY21	FY 22-26	Total FY 17-26
SOURCE OF SUPPLY							
Dam Seismic Stability Evaluation*				485	487		**972**
South County Recycled Water Pipeline - Short-Term Implementation Phase 1B*	15,772	183					**15,955**
South County Recycled Water Pipeline - Short-Term Implementation Phase 2*			79	361			**440**
Central Valley Project Capital Payments*	8,764	9,354	9,683	10,024	10,377	57,623	**105,826**
Silicon Valley Advanced Water Purification Center	135						**135**
Pacheco Conduit Inspection and Rehabilitation*	5,434						**5,434**
Small Capital Improvements, San Felipe Reach 1*	1,560	541	877			2,615	**5,593**
Small Capital Improvements, San Felipe Reach 2*	124						**124**
Small Capital Improvements, San Felipe Reach 3*	567		349		756	6,602	**8,274**
Coyote Pumping Plant Warehouse*	2,227						**2,227**
Wolfe Road Recycled Water Facility	657						**657**
RWFE[1.] - Silicon Valley Adv Wtr Purification Center Expansion	5,200	15,142	73,528	118,189	108,517	6,266	**326,842**
RWFE[1.] - Indirect Potable Water Reuse Projects - Planning	2,090	541	562	585			**3,778**
RWFE[1.] - Purified Water Pipelines	3,848	11,357	55,712	89,849	83,083	4,686	**248,535**
Almaden Dam Improvements	2,479	17,716	10,917	9,799	5,532		**46,443**
Anderson Dam Seismic Retrofit (C1)*		54,430	66,699	48,593			**169,722**
Calero Dam Seismic Retrofit - Design & Constuct	4,830	15,241	46,749	5,877	1,533		**74,230**
Guadalupe Dam Seismic Retrofit - Design & Construct	4,776	281	10,401	21,159	21,285	6,040	**63,942**
Coyote Pumping Plant ASD Replacement			562	1,954	9,586	5,029	**17,131**
RWFE[1.] - Future Recycled Water Projects						344,952	**344,952**
Source of Supply Subtotal	**58,463**	**124,786**	**276,118**	**306,875**	**241,156**	**433,813**	**1,441,212**
RAW WATER TRANSMISSION & DISTRIBUTION							
Pacheco/Santa Clara Conduit Right of Way Acquisition*	1,470	328	106				**1,904**
Penitencia Force Main Seismic Retrofit	1,904	56					**1,960**
Vasona Pumping Plant Upgrade	1,394	1,720	17,130	82			**20,326**
SCADA[2.] Remote Architecture & Communications Upgrade*	374	389	619	819	852	3,477	**6,530**
Small Capital Improvements, Raw Water Transmission*		115	0	53		1,417	**1,585**
FAHCE[3.] Stevens Creek Moffett Ave Fish Ladder - 90%		1,080	1,875				**2,955**
FAHCE[3.] Stevens Creek Multi-Port Outlet at Dam - 90%		275	1,029				**1,304**
FAHCE[3.] Implementation		4,739	4,379	14,691	14,690	106,609	**145,108**
Main & Madrone Pipelines Restoration (Xfer to Fund 26)*		4,223	128				**4,351**
Raw Water Transmission & Distribution Subtotal	**5,142**	**12,925**	**25,265**	**15,645**	**15,542**	**111,503**	**186,023**
ADMINISTRATION AND GENERAL							
Capital Warranty Services	100						**100**
Capital Training & Development-WUE Only*	155	381	476	536	567	2,173	**4,289**
CIP Development & Administration*	238	585	731	822	870	3,333	**6,578**
Survey Management & Technical Support*	86	211	264	297	314	1,204	**2,377**
Capital Program Services Administration-WUE Only*	626	1,536	1,920	2,160	2,286	8,756	**17,285**
Technical Review Committee*	90	221	277	311	329	1,262	**2,490**
Capital Health & Safety Training-WUE Only*	30	73	92	103	109	418	**826**
Capital Training & Development-WSS Only*	197	483	604	680	719	2,755	**5,439**
Capital Program Services Administration-WSS Only*	569	1,397	1,747	1,965	2,080	7,966	**15,725**
Capital Health & Safety Training-WSS Only*	19	46	58	65	69	264	**522**
5-Year Pipeline Rehabilitation*	3,774						**3,774**
10-Year Pipeline Rehabilitation (FY 18-FY 27)*		16,444	20,762	11,818	4,637	42,469	**96,130**
Water Treatment Plant-WQL Network Equipment	180	757	407	166		5,271	**6,781**
Regionally Significant Habitat Land Acquisition		724	749	775	802	4,153	**7,203**
Winfield Capital Improvements (assume 24% WU)*	1,422	149					**1,572**
Headquarters Operations Building (assume 60% WU)*	604	8,474					**9,079**
Projected Carryforward*	12,561						**12,561**
Administration and General Subtotal	**20,653**	**31,483**	**28,087**	**19,699**	**12,783**	**80,025**	**192,730**

Table 4-5.2 Capital Improvements Projects – Fiscal Years 2016–17 Through 2025–26 (Continued)

Name	FY17	FY18	FY19	FY20	FY21	FY 22-26	Total FY 17-26
WATER TREATMENT							
Fluoridation at WTPs	3,012						**3,012**
PWTP[4.] Clearwell Recoating & Repair	550						**550**
RWTP[5.] FRP Residuals Management Modifications	244						**244**
RWTP[5.] Treated Water Valves Upgrade	57						**57**
RWTP[5.] Reliability Improvement	44,712	44,496	44,811	46,345	146		**180,510**
IRP2 WTP Ops Bldgs Seismic Retrofit	840						**840**
Small Capital Improvements, Water Treatment	2,845	767	5,465	3,562	3,492	21,780	**37,911**
PWTP[4.] Residuals Management		703	1,462	7,835			**10,000**
Water Treatment Subtotal	**52,260**	**45,966**	**51,738**	**57,742**	**3,638**	**21,780**	**233,124**
TREATED WATER TRANSMISSION & DISTRIBUTION							
Penitencia Delivery Main Seismic Retrofit	843	30					**873**
Small Capital Improvements, Treated Water Transmission	56		84				**140**
Treated Water Transmission & Distribution Subtotal	**899**	**30**	**84**				**1,013**
TOTAL FUNDED	**137,417**	**215,191**	**381,293**	**399,961**	**273,119**	**647,121**	**2,054,101**

1. Recycled Water Facilities' Expansion
2. Supervisory Control and Data Acquisition
3. Fisheries and Aquatic Habitat Collaborative Effort
4. Penitencia Water Treatment Plant
5. Rinconada Water Treatment Plant
6. Infrastructure Reliability Plan, Portfolio 2

Note: The asterisked projects would benefit the South County, Zone W-5, and therefore would be funded in part or in whole by the South County.

Table 4-5.3 shows the lower priority or deferred capital projects that are not funded under the maximum proposed charges for FY 2016–17. The postponed capital projects total approximately $150 million (inflated) over the next ten years. A higher groundwater production charge projection would be necessary to fund these postponed capital projects.

Table 4-5.3 List of Capital Projects Postponed Indefinitely

	Proposed Funding in Raw Dollars						
Name	Year 1	Year 2	Year 3	Year 4	Year 5	Years 6-10	Total Yr 1-10
SOURCE OF SUPPLY							
SCADA[2] Small Capital Improvements - Source of Supply*	55	448	466	786	791	2,932	**5,478**
Coyote Pumping Plant ASD Replacement	520	1,806	8,793	4,579			**15,698**
Dam Seismic Retrofit at 2 Dams (Chesbro & Uvas)*			17,900	17,900	17,900	35,800	**89,500**
Land Rights - South County Recycled Water Pipeline*		541	2,643	2,632			**5,816**
Source of Supply Subtotal	**575**	**2,795**	**29,802**	**25,897**	**18,691**	**38,732**	**116,492**
RAW WATER TRANSMISSION & DISTRIBUTION							
Alamitos Diversion Dam Improvements	974	1,371					**2,345**
Coyote Diversion Dam Improvements	114	1,259	765				**2,138**
SCADA[2] Small Capital Improvements - Raw Water Trans & Dist	61	499	519	875	881	3,265	**6,100**
Raw Water Transmission & Distribution Subtotal	**1,149**	**3,129**	**1,284**	**875**	**881**	**3,265**	**10,583**
WATER TREATMENT							
SCADA[2] Small Capital Improvements - Water Treatment	180	1,476	1,535	2,586	2,605	9,652	**18,034**
Water Treatment Subtotal	**180**	**1,476**	**1,535**	**2,586**	**2,605**	**9,652**	**18,034**
ADMINISTRATION AND GENERAL							
Fleet and Facility Annex Improvements (assume 60% WU)*	920	3,462	337				**4,719**
Administration and General Subtotal	**920**	**3,462**	**337**				**4,719**
TOTAL UNFUNDED	**2,823**	**10,862**	**32,958**	**29,358**	**22,178**	**51,649**	**149,828**

2. Supervisory Control and Data Acquisition

Note: The asterisked projects would benefit the South County, Zone W-5, and therefore would be funded in part or in whole by the South County.

4-6 FINANCES

Financing and Bond Rating

To fund the construction of new facilities, the water district has historically relied on both pay-as-you-go financing and long-term debt financing as authorized by the voters in 1984. Water utility debt service will increase by roughly $13.3 million in FY 2016–17 due to a planned long-term debt issuance. Looking forward, capital improvement needs total nearly $2.1 billion (in inflated dollars) for the ten fiscal years 2016–17 through 2025–26. As shown in Figure 4-6.1, the water district will see debt service rise from $27.3 million in FY 2016–17 to roughly $123.2 million in FY 2025–26 as a result of periodic debt issuances to fund capital projects. Total outstanding debt is shown in Figure 4-6.2 and is projected to increase from $493 million in FY 2016–17 to $1.4 billion in FY 2025–26. This outstanding debt could be significantly higher if all postponed capital projects were funded. Conversely, the debt could also be reduced if projects are reduced or further external funding is found.

Figure 4-6.1 Projected Debt Service

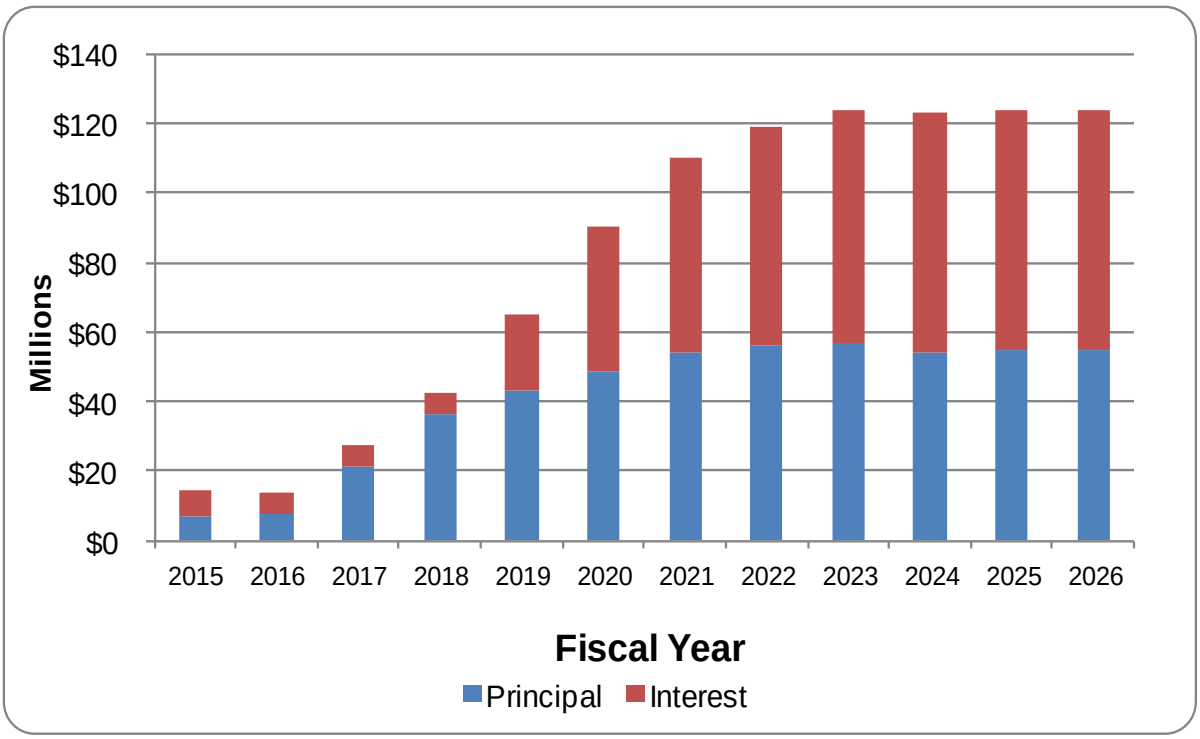
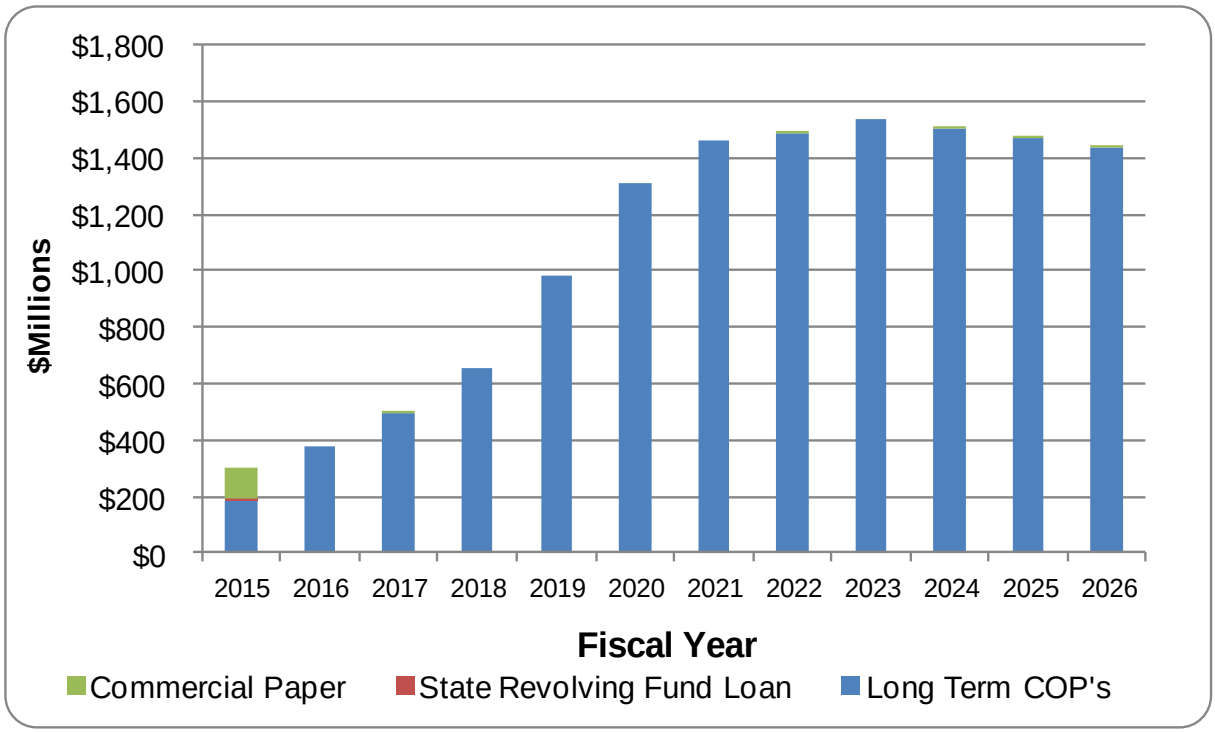


Figure 4-6.2 Projected Outstanding Debt



Current Water Utility senior lien debt issuances are rated Aa1 from Moody's and AA- from Standard & Poor's. These ratings reflect the water district's strong financial position and the highly rated creditworthiness of water district issued securities. The ratings are among the highest for a water-related governmental entity in the state of California, which helps keep interest costs borne by the water district at a minimum.

According to Fitch Ratings report on the 2015 Outlook for Water and Sewer Sector dated December 10, 2014, most U.S. water and sewer ratings are expected to remain stable in the coming year despite ongoing operating and capital pressures due to sound fundamentals, financial stability, moderate debt profile, and favorable economic climate. Some outlook sensitivities cited by Fitch include cost recovery and capital spending, drinking water supply pressures (e.g. drought), gradual tightening of economic regulations, and improved environment for local governments. Such sensitivities may pressure credit ratings for California water utilities, thereby driving up the overall cost of financing projects.

Water Utility Funds Projected Proforma

Table 4-6.1 shows the projected revenues, expenditures, and reserves over the next ten years for the Water Utility Funds. By financing with a combination of debt, current year revenue, and reserves, the water district is able to meet its capital investment plan. Under the maximum proposed projection, the financial model assumes that discretionary reserves (the operating and capital reserve plus the supplemental water supply reserve) are maintained at minimum per district policy. The minimum per policy for these reserves equates to having just under 3 months worth of Water Utility operating outlays in the bank. These reserves serve several purposes including: 1) to meet cash flow needs; 2) provide emergency funding; and 3) to provide a funding source for future operating and capital needs. Last year, the Board established a Drought Contingency Reserve that would be built up in healthier rainfall and economic times. The purpose of this reserve is to offset costs that arise during a drought and minimize spikes in the rates. The financial model assumes no funding for the Drought Contingency Reserve at this time given the current historic drought. The water district's current reserve policy can be found within the Financial Summaries section of the FY 2015–16 Budget document.[7]

The financial model under the FY 2016–17 maximum proposed projection reflects a Senior Lien Debt Service Coverage Ratio ranging between 2.02 and 2.26 between FY 2016-17 and FY 2025–26. Targeting a ratio of 2.0 or better helps to ensure financial stability and continued high credit ratings.

[7] The FY 2015-16 Budget document is located at http://www.valleywater.org/About/Finance.aspx.

Table 4-6.1 Ten-Year Water Utility Plan – ($ in Thousands)

	Actual	Projected	Projected	Projected	Projected	Projected	Projected	Projected	Projected	Projected	Projected	Projected
	2014-15	2015-16	2016-17	2017-18	2018-19	2019-20	2020-21	2021-22	2022-23	2023-24	2024-25	2025-26
Operating Revenues												
Groundwater Production Charges	$77,095	$62,431	$79,046	$100,526	$125,739	$159,355	$196,038	$213,382	$227,988	$236,906	$244,988	$252,974
Surface & Recycled Water Charges	$925	$1,885	$2,273	$2,559	$2,859	$3,198	$3,493	$3,778	$4,012	$4,162	$4,299	$4,434
Treated Water Charges	$76,799	$91,448	$110,860	$125,396	$141,864	$160,632	$176,732	$192,096	$205,265	$213,205	$220,397	$227,765
Other	$733	$460	$660	$660	$660	$660	$660	$660	$660	$660	$660	$660
Inter-governmental Services	$2,563	$2,243	$1,173	$1,195	$716	$730	$750	$764	$785	$800	$818	$836
Total Operating Revenue	**$158,116**	**$158,467**	**$194,012**	**$230,336**	**$271,838**	**$324,575**	**$377,673**	**$410,680**	**$438,710**	**$455,733**	**$471,162**	**$486,669**
Non-Operating Revenues												
Property Taxes	$27,701	$31,680	$38,879	$43,085	$43,298	$49,518	$56,747	$58,983	$69,227	$74,480	$81,742	$90,013
Interest	$1,511	$1,080	$670	$994	$1,268	$1,666	$2,175	$2,746	$3,337	$3,921	$4,613	$6,948
Capital Contributions	$847	$10,341	$2,811	$745	$1,475	$4,367	$266	$610	$2,313	$1,301	$445	$299
Semitropic Sales	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Other	$1,966	$3,750	$1,377	$1,384	$1,391	$1,398	$1,406	$1,414	$1,422	$1,431	$1,440	$1,449
Total Non-Operating Revenues	$32,025	$46,851	$43,737	$46,208	$47,431	$56,949	$60,593	$63,752	$76,299	$81,132	$88,239	$98,708
Total Revenue	**$190,140**	**$205,319**	**$237,749**	**$276,544**	**$319,269**	**$381,525**	**$438,266**	**$474,432**	**$515,009**	**$536,865**	**$559,401**	**$585,377**
	-8.9%	8.0%	15.8%	16.3%	15.4%	19.5%	14.9%	8.3%	8.6%	4.2%	4.2%	4.6%
Operating Outlays												
Operations	$153,895	$193,928	$182,900	$187,400	$192,918	$201,704	$221,737	$248,781	$270,372	$282,306	$296,358	$315,307
Operating Projects	$765	$335	$105	$137	$144	$148	$155	$160	$167	$172	$178	$184
Debt Service	$14,333	$13,959	$27,309	$42,597	$65,164	$90,115	$110,424	$118,833	$123,788	$123,024	$123,462	$123,199
Total Operating Outlays	**$168,992**	**$208,222**	**$210,314**	**$230,134**	**$258,225**	**$291,967**	**$332,316**	**$367,774**	**$394,328**	**$405,502**	**$419,998**	**$438,689**
Operations + OP % Increase	14.6%	25.6%	-5.8%	2.5%	2.9%	4.6%	9.9%	12.2%	8.7%	4.4%	5.0%	6.4%
Operating Transfers In/(Out)	(11,406)	17,633	571	(8,088)	4,923	5,362	5,665	5,985	6,322	6,676	7,021	7,357
Debt Proceeds	46,650	140,550	128,000	163,601	319,724	319,772	173,172	50,421	77,714	0	0	0
Capital Outlay	(72,107)	(165,917)	(135,391)	(202,344)	(381,165)	(399,961)	(273,119)	(148,668)	(197,047)	(128,681)	(133,944)	(38,781)
Total Other Financing Sources/ (Uses)	(36,863)	(7,734)	(6,819)	(46,831)	(56,518)	(74,827)	(94,282)	(92,262)	(113,011)	(122,005)	(126,922)	(31,423)
Balance Available	**(15,715)**	**(10,637)**	**20,616**	**(421)**	**4,526**	**14,731**	**11,668**	**14,396**	**7,670**	**9,359**	**12,481**	**115,265**
Reserves:												
Restricted Reserves:												
WUE-Restricted Operating Reserve	$13,893	$17,352	$17,526	$19,178	$21,519	$24,331	$27,693	$30,648	$32,861	$33,792	$35,000	$36,557
WUE - Rate Stablization Reserve	$2,139	$1,396	$2,731	$4,260	$6,516	$9,011	$11,042	$11,883	$12,379	$12,302	$12,346	$12,320
San Felipe Emergency Reserve	$4,027	$2,849	$2,899	$2,949	$2,999	$3,049	$3,099	$3,149	$3,199	$3,249	$3,299	$3,349
Revenue Bond Debt Service Reserve	$4,801	$4,801	$4,801	$4,801	$4,801	$4,801	$4,801	$4,801	$4,801	$4,801	$4,801	$4,801
State Water Project Tax Reserve	$827	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
State Revolving Fund	$401	$401	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Total Restricted	**$26,088**	**$26,798**	**$27,957**	**$31,187**	**$35,835**	**$41,192**	**$46,635**	**$50,481**	**$53,239**	**$54,144**	**$55,446**	**$57,027**
Committed Reserves:												
Floating Rate Debt Stabilization	$148	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Designated for Operating and Capital	$11,488	$17,567	$48,185	$44,134	$43,613	$52,587	$58,411	$68,561	$73,073	$81,127	$91,906	$205,190
Supplemental Water Supply Appropo.	$1,330	$12,763	$14,163	$14,563	$14,963	$15,363	$15,763	$16,163	$16,563	$16,963	$17,363	$17,763
Drought Contingency Reserve	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
SVAWPC Sinking Fund	$939	$1,906	$1,906	$1,906	$1,906	$1,906	$1,906	$1,906	$1,906	$1,906	$1,906	$1,906
Currently Authorized Projects	$42,239	$12,561	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Total Designated Reserves	**$56,144**	**$44,797**	**$64,254**	**$60,603**	**$60,482**	**$69,856**	**$76,080**	**$86,630**	**$91,542**	**$99,996**	**$111,175**	**$224,859**
Designated Liability & Other:												
GO litigation liability	$7,386	$7,386	$7,386	$7,386	$7,386	$7,386	$7,386	$7,386	$7,386	$7,386	$7,386	$7,386
Total Designated Liability & Other	**$7,386**	**$7,386**	**$7,386**	**$7,386**	**$7,386**	**$7,386**	**$7,386**	**$7,386**	**$7,386**	**$7,386**	**$7,386**	**$7,386**
Total	**$89,619**	**$78,981**	**$99,597**	**$99,176**	**$103,703**	**$118,434**	**$130,101**	**$144,497**	**$152,167**	**$161,526**	**$174,007**	**$289,272**
Debt Service Coverage												
Senior Lien Debt Service Coverage	1.59	1.74	2.09	2.04	2.13	2.11	2.09	2.02	2.08	2.12	2.20	2.26

North County (Zone W-2) Finances

North County (Zone W-2) is generally defined as the portion of the county north of Metcalf Road. North County accounts for approximately 80 percent of water district water consumption, but because of higher charges due to higher North County costs, about 95 percent of the Water Utility Enterprise's revenue. As shown at the beginning of the financial section in Table 4-2.1, the proposed maximum is $1,105 per acre-foot groundwater production charge for M&I or other non-agricultural water and a $1,205 per acre-foot charge for contract treated water for FY 2016–17. If adopted, there would be a 23.6 percent increase for groundwater production and 21.2 percent for contract treated water compared to FY 2015–16. The average household would experience an increase in their monthly bill of $7.27 or about 24 cents a day. Customers may also experience additional charge increases enacted by their retail water provider.

Staff propose a $2.53 per acre-foot or 11.8 percent increase to the North County agricultural groundwater production charge, which results in $23.89 per acre-foot in FY 2016–17, in concert with the South County agricultural groundwater production charge. The resulting agricultural groundwater production charge is 2.2 percent of the M&I groundwater production charge in North County.

Staff recommend maintaining the surcharge on treated water delivered under the contracts with retail agencies at $100 per acre-foot. As outlined in treated water contracts, the water district has the discretion to make available treated water in excess of the retailers' basic contract amounts, so-called non-contract treated water, "… at such times and such prices as determined by the District." Staff recommend maintaining the non-contract surcharge at $200 per acre-foot for FY 2016–17 to encourage conservation. However, due to available surface water supplies and below normal groundwater levels, staff has encouraged retail customers since May 2015 to take treated water up to 100% of the original contract amount in order to help the groundwater basin recover from the drought.

It is recommended that the surface water master charge be increased from $22.60 per acre-foot to $27.46 per acre-foot in order to gradually bring revenues in line with costs related to managing, operating and billing for surface water diversions. The increases in the basic user charge and surface water master charge result in a total surface water charge for M&I water of $1,132.46 per acre-foot or a 23.6 percent increase. The total surface water charge for agricultural water would increase to $51.35 per acre-foot, which is a 16.8 percent increase, relative to FY 2015–16. All deliveries of untreated surface water have ceased with two exceptions, due to the drought.

To ease the burden on proposed groundwater production charge increases, staff recommends setting the SWP tax collection for FY 2016–17 at $33 million. The water district incurs an annual indebtedness to the State of California pursuant to its Water Supply Contract dated November 20, 1961. Such indebtedness is proportional to the water district's allocation of water from the SWP and pays for construction, maintenance and operation of SWP infrastructure and facilities. Staff anticipates that the water district's contractual indebtedness to the State under the State Water Supply Contract for FY 2016–17 will be approximately $34 million.

Table 4-6.2 shows the relationship between expenditures and the sources of revenue in North County Zone W-2. The maximum proposed groundwater production charges for FY 2016–17 are necessary to conduct "district activities in the protection and augmentation of the water supplies for users within a zone or zones of the district which are necessary for the public health, welfare, and safety of the people of this State" (District Act, Section 26.3).

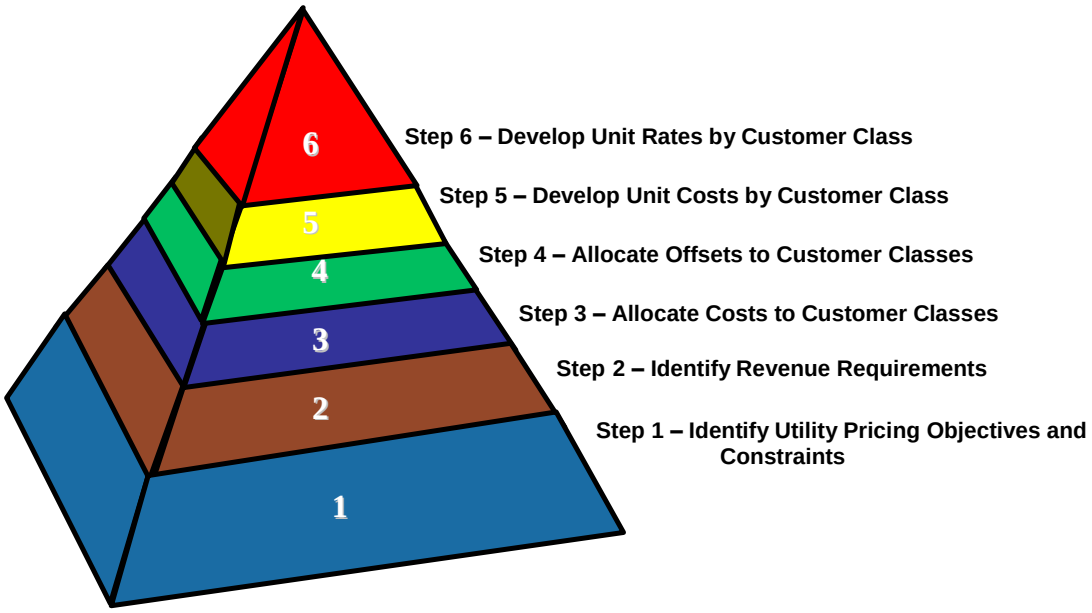
Table 4-6.2 Fiscal Year 2016–17 North County Water Utility Water Program Requirements and Financing Sources

Cost Center	Ends Policy	FY 17 Projected ($K)	Description of Cost Center/Activities
Source of Supply	E-2.1 Current and future water supply for municipalities, industries, agriculture and the environment is reliable	98,238	This cost center contains all the anticipated expenditures that relate to obtaining, producing, and protecting a water supply; including all conservation, reclamation, and importation costs.
Raw Water Transmission & Distribution	E-2.2 Raw Water Transmission and Distribution Assets Are Managed to Ensure Efficiency and Reliability	9,559	This cost center contains all expenditures relating to the distribution of raw water. The distribution system consists of pipelines, canals, and percolation ponds and includes the use of creek systems.
Water Treatment and Treated Water Transmission & Distribution	E-2.3 Reliable High Quality Water is Delivered	38,321	These cost centers contain all expenditures associated with the treatment of water at the Rinconada, Penitencia and Santa Teresa Water Treatment Plants, as well as those expenditures related to the distribution of treated water to water utilities and includes costs associated with the treated water reservoirs, pumping plants, pipelines, and turnouts.
Administration & General	Support Services	18,555	This cost center contains all expenditures of an administrative nature which cannot be properly assigned to another of the other four cost centers. Work performed in this cost center cover items such as the collection of groundwater charges, financial and cash flow studies, annual reports, and general water management planning.
Capital & Other	Debt Service	27,309	Principal and Interest payments on outstanding debt
	Capital Improvements	137,417	Capital Improvement Program
	Open Space Credit	4,135	Help preserve the open space benefits provided by agricultural lands
	Adjust for FY 14 Actuals Versus Plan	(45,397)	
	Total Program Requirements	**288,136**	
	Financing Sources		
	Capital Cost recovery	4,472	
	Debt Proceeds	128,000	
	Interest & Other	5,668	
	Property Tax	35,675	
	Treated Water Sales	110,860	
	Surface Water Charges	1,701	
	Groundwater Production Charges	69,741	
	Capital Carryforward Reserves	12,561	
	Change in Reserves	(80,541)	
	Total Financing Sources	**288,136**	

Figure 4-6.3 and Table 4-6.3 show the cost of service analysis by customer class following six industry standard rate making steps:

1. Identify utility pricing objectives and constraints
2. Identify revenue requirements
3. Allocate costs to customer classes
4. Reduce costs by revenue offsets or non-rate related funding sources
5. Develop unit costs by customer class or net revenue requirements by customer class
6. Develop unit rates by customer class

Figure 4-6.3 Industry Standard Rate Making Steps



Water Utility pricing objectives and constraints are identified in Resolution 99-21, the District Act, Proposition 218, and existing contracts.

Line 11 in Table 4-6.3 represents rate making steps 2 and 3 summarizing the revenue requirements for North County Zone W-2 including operations costs, capital costs and debt service. Step 2 involves allocating water utility costs between zones W-2 (North County) and W-5 (South County) according to the benefits provided in each zone. Appendix B shows the percentage of operations costs allocated to the South County, along with a brief description of the basis of the allocation. Appendix C shows the percentage of capital and debt service costs allocated to South County along with a brief description of the basis of the allocations. Costs not allocated to the South County are allocated to the North County. Step 3 involves allocating costs directly to each customer class where possible, or allocating based on volume where the program services benefit multiple customer classes.

Line 29 in Table 4-6.3 represents rate making steps 4 and 5. It reflects the unit cost per acre-foot by customer class after applying non-rate related offsets to the revenue requirements. Offsets have been allocated directly to each zone and customer class where possible, or allocated based on volume where the offset applies to multiple customer classes. FY 2016–17 unit costs include an adjustment for the

reconciliation of FY 2013–14 actual costs and revenues against what should have been collected given actual costs.

Line 39 represents rate making step 6. There are two adjustments that have been made to achieve a pricing structure that meets the objectives of Resolution 99-21, namely a structure that facilitates managing surface water (SW) and groundwater (GW) supplies conjunctively to prevent the over use or under use of the groundwater basin. First, non-rate related revenues are offset against the cost of agricultural water. This is referred to as the "Open Space Credit." The purpose of the credit is to preserve the open space benefits provided by agricultural lands by keeping agricultural groundwater production charges low.

The second adjustment involves reallocating the cost of treated water to groundwater and surface water users based on proportional water usage. Importing water into the county for treatment and subsequent distribution to treated water (TW) users offsets the need to pump water from the ground. Without treated imported water supplies, the groundwater basin would become over drafted, which would also impact surface water users (who are permitted to take surface water in-lieu of pumping it from the ground). Consequently, the reallocation of treated water cost represents the value of treated water to groundwater and surface water users and facilitates a pricing structure that prevents the over use of the groundwater basin. The 2011 RFC report mentioned earlier in the section supports the reasonableness of such an adjustment.

Another aspect of the second adjustment is related to setting the basic user charge for surface water equal to the groundwater production charge. Surface water use is effectively in-lieu groundwater use permitted by the water district to help preserve the groundwater basin. As such, the costs related to preserving the groundwater basin provide value to surface water users because it makes available water district surface water, which otherwise would only be used for groundwater recharge. Similarly, the costs related to providing surface water benefit groundwater users because surface water usage helps preserve the groundwater basin. The second adjustment reallocates cost between surface water and groundwater customers in order to set the basic user charge for surface water equal to the groundwater production charge in recognition of this conjunctive use relationship, and in accordance with board policy. The 2015 RFC report mentioned earlier in the section supports the reasonableness of such an adjustment.

Table 4-6.3 Fiscal Year 2016–17 North County (Zone W-2) Cost of Service by Customer Class

	FY '17 Projection ($K)	Zone W-2					
		GW		TW	SW		Total W-2
		M&I	AG	M&I	M&I	Ag	
1	**Operating Outlays**						
2	Operations/Operating Projects	40,622	412	86,628	691	17	128,369
3	SWP Imported Water Costs	8,698	90	27,009	501	12	36,310
4	Debt Service	6,463	67	20,687	90	2	27,309
5	**Total Operating Outlays**	55,784	568	134,324	1,282	31	191,988
6	Step 2-						
7	**Capital & Transfers** Identify revenue						
8	Operating Transfers Out reqmnts	813	8	1,185	19	0	2,027
9	Capital Outlays excl. carryforward	25,956	267	96,001	590	14	122,829
10	**Total Capital & Transfers**	26,769	276	97,187	609	15	124,856
11	**Total Annual Program Costs**	82,553	844	231,511	1,891	46	316,844
12		Step 3 - Allocate costs to customer classes					
13	**Revenue Requirement Offsets**						
14	Capital Cost Recovery	(1,794)	(18)	(2,615)	(43)	(1)	(4,472)
15	Debt Proceeds	(27,049)	(279)	(100,043)	(615)	(15)	(128,000)
16	Inter-governmental Services	(413)	(4)	(602)	(10)	(0)	(1,029)
17	SWP Property Tax	(7,069)	(73)	(23,468)	(400)	(10)	(31,020)
18	South County Deficit/Reserve	258	3	377	6	0	644
19	Interest Earnings Step 4-	(269)	(3)	(392)	(6)	(0)	(670)
20	Inter-zone Interest Reduce costs by	12	0	18	0	0	31
21	Capital Contributions revenue offsets	(1,128)	(12)	(1,644)	(27)	(1)	(2,811)
22	Other	(965)	(10)	(879)	(15)	(0)	(1,870)
23	Reserve Requirements	16,626	72	63,461	378	4	80,541
24	**Adjusted Revenue Requirement (FY 17)**	**60,764**	**520**	**165,723**	**1,160**	**23**	228,190
25	**Adjusted Revenue Requirement (FY 14 adj)**	768	(24)	(45,897)	(234)	(10)	(45,397)
26	**Total Adjusted Revenue Requirement**	**61,532**	**496**	**119,826**	**926**	**13**	182,793
27	Volume (KAF)	63.1	0.7	92.0	1.5	0.0	157
28							
29	Revenue Requirement per AF	$ 975	$ 763	$ 1,302	$ 617	$ 358	
30		Step 5 - Develop unit costs by customer class					
31	**Adjustments for Agricultural Preservation**						
32	Allocate WU 1% Ad Valorem Prop Tax	0	(480)	-	-	(11)	(492)
33	Transfer GF 1% Ad valorem Prop Tax	-	-	-	-	-	-
34	Transfer WS 1% Ad Valorem Prop Tax	-	-	-	-	-	-
35	Revenue Requirement per AF	$ 975.1	$ 23.9	$ 1,302	$ 617	$ 51.3	
36	Step 6 - Rate Design						
37	**Adjustments to Facilitate Conjunctive Use**						
38	Reallocate TW/SW/RW costs	8,194	-	(8,967)	773	-	(0)
39	Charge per AF	$ 1,105	$ 23.9	$ 1,205	$ 1,132	$ 51.3	
40	Total Revenue ($K)	$69,726	$16	$110,859	$1,699	$2	182,301

South County (Zone W-5) Finances

South County (Zone W-5) is generally defined as the portion of Santa Clara County south of Metcalf Road, including Coyote Valley, Morgan Hill, San Martin, Gilroy and other unincorporated areas within the zone. Within the Water Utility Fund, water district staff track revenue and costs associated with the South County Zone W-5 separately so that the groundwater production charge for services that benefit the South County Zone can be calculated.

Charges in the South County Zone W-5 are based on the costs of specific facilities, imported water costs, and operations costs related to managing a conjunctive use program, ensuring water quality, and measuring water supplies and usage. Historically, South County finances have been managed to maintain an approximate balance between cumulative revenues and costs. However, going forward, staff believe that maintaining a cumulative surplus or reserve balance would be prudent to provide a funding source for unforeseen future costs.

For South County, the proposed maximum groundwater production charge is $398 per acre-foot for M&I water and $23.89 per acre-foot for agricultural water. The average household would experience an increase in their monthly bill of $1.44 or about 5 cents per day. Customers may also experience additional water charge increases enacted by their retail water provider.

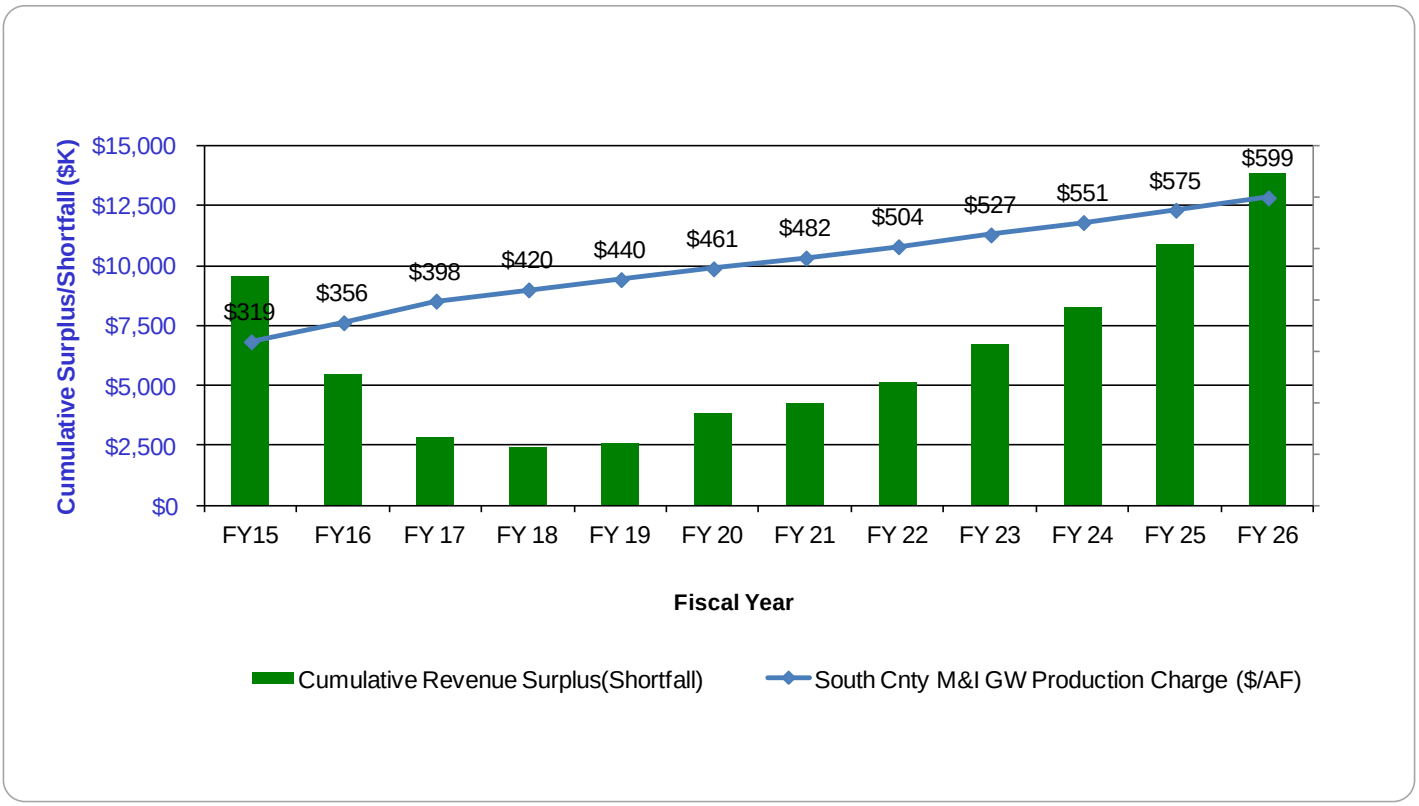
It is recommended that the surface water master charge be increased from $22.60 per acre-foot to $27.46 per acre-foot in order to gradually bring revenues in line with costs related to managing, operating and billing for surface water diversions. The increases in the basic user charge and surface water master results in a total surface water charge for M&I water of $425.46 per acre-foot or a 12.4 percent increase. The total surface water charge for agricultural water would increase to $51.35 per acre-foot, which is a 16.8 percent increase, relative to FY 2015–16.

For recycled water, staff recommend increasing the M&I charge by 12.5 percent to $378 per acre-foot. For agricultural recycled water, staff recommend a 5.6 percent increase to $47.68 per acre-foot. This pricing is consistent with the provisions of the "Wholesale-Retailer Agreement for Supply of recycled Water Between Santa Clara Valley Water District and City of Gilroy.[8]" The increase maximizes cost recovery while concurrently providing an economic incentive to use recycled water.

On a cumulative basis, revenues are estimated to exceed costs by approximately $2.8 million at the end of FY 2016–17. Figure 4-6.4 shows a cumulative revenue surplus projected in subsequent years which could help pay for potential dam seismic work at Uvas and Chesbro dams. The projection assumes an average increase of 5.4 percent in the M&I groundwater charge between FY 2016–17 and FY 2025–26. The average increase under the high end of the projected range shown in Figure 4-2.1 is 7.7 percent, over the same time frame.

[8] The Wholesale-Retailer Agreement for Supply of recycled Water Between Santa Clara Valley Water District and City of Gilroy can be accessed at http://www.valleywater.org/2016-17GroundwaterChargeProcess

Figure 4-6.4 South County Cumulative Revenue Surplus / Shortfall Projection ($/Thousands)



Open Space Credit

The District Act limits agricultural groundwater production charges to a maximum of 25 percent of the M&I groundwater production charges. Current Board policy adds an “open space” credit to agricultural revenues. The purpose of the credit is to help preserve the open space benefits provided by agricultural lands by keeping agricultural groundwater production charges low. To the extent that Proposition 218 applies to the groundwater production charge, it requires that costs to end users be proportional such that one class of users is not subsidizing another.

In 2013 and under the request of the Board, staff completed a study of the Board’s Open Space Credit policy to address whether or not the property taxes used to support the Open Space Credit should be used to fund other important water district activities, and whether increasing the agricultural groundwater production charges would affect the viability of the agricultural lands. Staff engaged a diverse group of stakeholders to gain insight on the impact of the current Open Space Credit policy on them and the impact of any potential changes to this policy. Staff convened a Working Group comprised of members representing agriculture, water retailers, the business community and the County of Santa Clara Land Planning. Staff solicited feedback from the Agricultural Advisory Committee, the Environmental Advisory Committee, Santa Clara County Farm Bureau, Water Commission, and farmers in North County and South. At the completion of the study in November 2013, the Board agreed with the Working Group recommendation and decided to maintain the Open Space Credit as is but agreed to have further discussions on the policy as necessary in the future.

To comply with the current agricultural groundwater production charge setting policy, staff recommends the open space credit received by South County be $8.0 million in FY 2016–17 (funded by 1 percent ad valorem property taxes). This includes an adjustment that reconciles FY 2013–14 actuals against what was projected. The maximum proposed agricultural groundwater production charge for FY 2016–17 is $23.89 per acre foot, which is 6 percent of the proposed M&I groundwater production charge in South County.

Program Requirements and Financing Sources

Table 4-6.4 shows the relationship between expenditures and sources of revenue in South County for FY 2016–17. It is estimated that South County will pay for $18.3 million of operating costs and pay back nearly $4.5 million in capital costs. The specific operating costs allocated to South County can be found in Appendix B. Details on capital cost recovery can be found in Appendix C. The maximum groundwater production charges proposed for FY 2016–17 in South County Zone W-5 are necessary to conduct, “district activities in the protection and augmentation of the water supplies for users within a zone or zones of the district which are necessary for the public health, welfare, and safety of the people of this State” (District Act, Section 26.3).

Table 4-6.4 Fiscal Year 2016–17 South County Water Utility Program Requirements and Financing Sources

Cost Center	FY 17		
	Ends Policy	Projected ($K)	Description of Cost Center/Activities
Source of Supply	E-2.1 Current and future water supply for municipalities, industries, agriculture and the environment is reliable	10,998	This cost center contains all the anticipated expenditures that relate to obtaining, producing, and protecting a water supply; including all conservation, reclamation, and importation costs.
Raw Water Transmission & Distribution	E-2.2 Raw Water Transmission and Distribution Assets Are Managed to Ensure Efficiency and Reliability	3,385	This cost center contains all expenditures relating to the distribution of raw water. The distribution system consists of pipelines, canals, and percolation ponds and includes the use of creek systems.
Water Treatment and Treated Water Transmission & Distribution	E-2.3 Reliable High Quality Water is Delivered	66	These cost centers contain all expenditures associated with the treatment of water at the Rinconada, Penitencia and Santa Teresa Water Treatment Plants, as well as those expenditures related to the distribution of treated water to water utilities and includes costs associated with the treated water reservoirs, pumping plants, pipelines, and turnouts.
Administration & General	Support Services	3,885	This cost center contains all expenditures of an administrative nature which cannot be properly assigned to another of the other four cost centers. Work performed in this cost center cover items such as the collection of groundwater charges, financial and cash flow studies, annual reports, and general water management planning.
Capital & Other	Capital Cost Recovery	4,472	Annual payment for completed capital facilities and improvements
	Interest (Earned)/Due Utility Reserves	(31)	Based on cumulative revenue surplus at 3% interest rate
	Adjust for FY 14 Actuals Versus Plan	(1,967)	
	Total Program Requirements	20,807	
	Financing Sources		
	Open Space Credit	6,732	
	Property Tax & Other Revenue	3,552	
	Surface Water Charges	279	
	Recycled Water Charges	293	
	Groundwater Production Charges	9,305	
	Total Financing Sources	**20,162**	
	FY 17 Revenue Surplus/(Shortfall)	**(644)**	

Figure 4-6.3 and Table 4-6.5 show the cost of service analysis by customer class following the six industry standard rate making steps for South County Zone W-5:

1. Identify utility pricing objectives and constraints
2. Identify revenue requirements
3. Allocate costs to customer classes
4. Reduce costs by revenue offsets or non-rate related funding sources
5. Develop unit costs by customer class or net revenue requirements by customer class
6. Develop unit rates by customer class

Line 11 in Table 4-6.5 represents rate making steps 2 and 3 summarizing the revenue requirements for South County Zone W-5. Costs have been allocated directly to each customer class where possible, or allocated based on volume where the costs benefit multiple customer classes.

Line 29 in Table 4-6.5 represents rate making steps 4 and 5. It reflects the unit cost per acre-foot by customer class after applying non-rate related offsets to the revenue requirements. Offsets have been allocated directly to each customer class where possible, or allocated based on volume where the offset applies to multiple customer classes. FY 2016–17 unit costs include an adjustment for the reconciliation of FY 2013–14 actual costs and revenue against what should have been collected given actual costs.

Line 39 represents rate making step 6. There are two adjustments that have been made to achieve a pricing structure that meets the objectives of Resolution 99-21, namely a structure that facilitates managing surface water and groundwater supplies conjunctively to prevent the over use or under use of the groundwater basin. First, non-rate related revenues are offset against the cost of agricultural water. This is referred to as the "Open Space Credit". The purpose of the credit is to help preserve the open space benefits provided by agricultural lands by keeping agricultural groundwater production charges low.

The second adjustment involves reallocating the cost of recycled water (RW) to groundwater and surface water users. Without recycled water supplies, there would be additional demand on the groundwater basin and a higher risk of overdraft, which would also impact surface water users (who are permitted to take surface water in lieu of pumping it from the ground). Consequently, the reallocation of recycled water cost represents the value of recycled water to groundwater and surface water users and facilitates a pricing structure that helps prevent the over use of the groundwater basin.

Another aspect of the second adjustment is related to setting the basic user charge for surface water equal to the groundwater production charge. Surface water use is effectively in-lieu groundwater use permitted by the water district to help preserve the groundwater basin. As such, the costs related to preserving the groundwater basin provide value to surface water users because it makes available water district surface water which otherwise would only be used for groundwater recharge. Similarly, the costs related to providing surface water benefit groundwater users because surface water usage helps preserve the groundwater basin. The second adjustment reallocates cost between surface water and groundwater customers in order to set the basic user charge for surface water equal to the groundwater production charge in recognition of this conjunctive use relationship, and in accord with board policy. The 2015 RFC report mentioned earlier in the section supports the reasonableness of these recycled and surface water conjunctive use adjustments.

Table 4-6.5 Fiscal Year 2016–17 South County (Zone W-5) Cost of Service by Customer Class

	FY '17 Projection ($K)	Zone W-5						
		GW		SW		RW		Total W-5
		M&I	AG	M&I	AG	M&I	AG	
1	**Operating Outlays**							
2	Operations/Operating Projects	8,518	8,656	222	568	194	166	18,326
3	SWP Imported Water Costs	-	-	-	-	-	-	-
4	Debt Service	-	-	-	-	-	-	-
5	**Total Operating Outlays**	8,518	8,656	222	568	194	166	18,326
6	Step 2-							
7	**Capital & Transfers** Identify revenue							
8	Operating Transfers Out reqmnts	-	-	-	-	-	-	-
9	Capital Outlays excl. carryforward	-	-	-	-	-	-	-
10	**Total Capital & Transfers**	-	-	-	-	-	-	-
11	**Total Annual Program Costs**	8,518	8,656	222	568	194	166	18,326
12		Step 3 - Allocate costs to customer classes						
13	**Revenue Requirement Offsets**							
14	Capital Cost Recovery	1,582	1,654	36	93	595	510	4,472
15	Debt Proceeds	-	-	-	-	-	-	-
16	Inter-governmental Services	(68)	(71)	(2)	(4)	-	-	(144)
17	SWP Property Tax	(906)	(947)	(21)	(54)	(29)	(25)	(1,980)
18	South County Deficit/Reserve	(295)	(308)	(7)	(17)	(9)	(8)	(644)
19	Interest Earnings Step 4-	-	-	-	-	-	-	-
20	Inter-zone Interest Reduce costs by revenue offsets	(14)	(15)	(0)	(1)	(0)	(0)	(31)
21	Capital Contributions	-	-	-	-	-	-	-
22	Other	(80)	(84)	(1)	(2)	-	-	(168)
23	Reserve Requirements	-	-	-	-	-	-	-
24	**Adjusted Revenue Requirement (FY 17)**	**8,738**	**8,886**	**228**	**583**	**751**	**644**	19,830
25	**Adjusted Revenue Requirement (FY 14 adj)**	(467)	(1,135)	0	(24)	(16)	(324)	(1,967)
26	**Total Adjusted Revenue Requirement**	**8,271**	**7,751**	**228**	**559**	**735**	**320**	17,863
27	Volume (KAF)	22.0	23.0	0.5	1.3	0.7	0.6	48
28								
29	Revenue Requirement per AF	$ 376	$ 337	$ 456	$ 430	$ 1,049	$ 533	
30		Step 5 - Develop unit costs by customer class						
31	**Adjustments for Agricultural Preservation**							
32	Allocate WU 1% Ad Valorem Prop Tax	-	(5,388)	-	-	-	-	(5,388)
33	Transfer GF 1% Ad valorem Prop Tax	-	(1,300)	-	-	-	-	(1,300)
34	Transfer WS 1% Ad Valorem Prop Tax	-	(514)	-	(492)	-	(291)	(1,298)
35	Revenue Requirement per AF	$ 376	$ 23.9	$ 456	$ 51.3	$ 1,049	$ 47.7	
36	Step 6 - Rate Design							
37	**Adjustments to Facilitate Conjunctive Use**							
38	Reallocate TW/SW/RW costs	485	-	(15)	-	(470)	-	0
39	Charge per AF	$ 398	$ 23.9	$ 425	$ 51	$ 378	$ 47.7	
40	Total Revenue ($K)	$8,756	$549	$213	$67	$265	$29	9,878

APPENDIX A

WATER UTILITY CHARGE COMPONENTS AND MAXIMUM PROPOSED CHARGES

Table A-1 Maximum Proposed Charge Components for Fiscal Year 2016–17

Component	Charge ($/AF)
Basic User, Zone W-2 (North County)	
Agricultural	23.89
M&I	1,105.00
Basic User, Zone W-5 (South County/Coyote Valley)	
Agricultural	23.89
M&I	398.00
Treated Water Surcharge	
Contract	100.00
Non-contract	200.00
Surface Water Charge	
Water Master	27.46

Table A-2 Maximum Proposed Charge Components for Fiscal Year 2016–17

Type of Charge	AG Water ($/AF)	M&I Water ($/AF)
Groundwater Production		
Zone W-2	$23.89	$1,105.00
Zone W-5	$23.89	$398.00
Surface Water[1]		
Other Zone W-5 Deliveries[2]	$51.35	$425.46
Other Zone W-2 Deliveries[3]	$51.35	$1,132.46
Minimum Charge Zone W-5[4]	$17.92	$298.50
Minimum Charge Zone W-2[5]	$17.92	$828.75
Treated Water		
Contract[6]	N/A	$1,205.00
Non-contract[7]	N/A	$1,305.00
Recycled Water		
Gilroy	$47.68	$378.00

[1] Surface water charge is the sum of the basic user charge plus the water master charge.
[2] Other Zone W-5 Deliveries = Basic User (AG or M&I @ $23.89/AF or $398.00/AF) + Water Master ($27.46/AF).
[3] Other Zone W-2 Deliveries = Basic User (AG or M&I @ $23.89/AF or $1,105.00/AF) + Water Master ($27.46/AF).
[4] Minimum Charge W-5 = 0.75 X Basic User W-5 (M&I @ $398.00/AF, AG @ $23.89/AF).
[5] Minimum Charge W-2 = 0.75 X Basic User W-2 (M&I @ $1,105.00/AF, AG @ $23.89/AF).
[6] Treated Water Charge is the sum of Basic User ($1,105.00/AF) and Treated Water Surcharge ($100.00/AF).
[7] The charge for non-contract deliveries is the sum of the basic user charge ($1,105.00/AF) and the treated water surcharge for non-contract water ($200.00/AF).

APPENDIX B

BASIS OF COST ALLOCATIONS BETWEEN NORTH AND SOUTH ZONES (IN THOUSANDS $)

Cost Center	Project #	Project Name	South County Allocation	South County Share	North County Share	Total FY 2017	Basis of Allocation
Source of Supply	91041012	Water Operations Planning	16.6%	79	395	473	Raw Water Deliveries
	91041018	Groundwater Management Program	42.1%	1,614	2,220	3,835	Groundwater Production Ratio
	91061012	Facilities Env Compliance	16.6%	6	29	35	Raw Water Deliveries
	91081007	Dam Safety Program	14.4%	230	1,365	1,595	Program Benefit Calculation
	91101004	Recycled Water Program	5.9%	394	6,285	6,679	Population
	91111001	Water Rights	16.6%	44	223	268	Raw Water Deliveries
	91131004	Imported Water Program	11.9%	1,305	9,658	10,963	Imported Water Ratio
	91131006	IW San Felipe Division Delvrs	18.6%	5,362	23,465	28,826	Program Benefit Calculation
	91131007	IW South Bay Aqueduct Delvrs	0.0%	-	1,873	1,873	No South County Benefit
	91131008	State Water Project Costs	0.0%	-	34,437	34,437	No South County Benefit
	91151001	Water Conservation Program	7.3%	399	5,069	5,468	Program Benefit Calculation
	91151011	Water Conservation Campaign	5.9%	13	213	226	Population
	91151012	Recycled/Purified Water Public Engagement	5.9%	35	565	601	Population
	91211004	San Felipe Reach 1 Operation	19.1%	107	451	558	CVP Imported Water Ratio
	91211005	SFD Reach 1 Administration	19.1%	2	7	9	CVP Imported Water Ratio
	91211084	San Felipe Reach1 Ctrl and Ele	19.1%	75	318	392	CVP Imported Water Ratio
	91211085	SF Reach 1-Engineering - Other	19.1%	21	88	109	CVP Imported Water Ratio
	91211099	San Felipe Reach 1 Gen Maint	19.1%	128	543	671	CVP Imported Water Ratio
	91221002	San Felipe Reach 2 Operation	19.1%	12	52	64	CVP Imported Water Ratio
	91221006	SF Reach 2-Engineering - Other	19.1%	55	234	289	CVP Imported Water Ratio
	91221099	San Felipe Reach 2 Gen Maint	19.1%	37	156	193	CVP Imported Water Ratio
	91231002	San Felipe Reach 3 Operation	19.1%	19	179	198	CVP Imported Water Ratio
	91231084	San Felipe Reach3 Ctrl and Ele	19.1%	36	337	372	CVP Imported Water Ratio
	91231085	SF Reach 3-Engineering - Other	19.1%	23	218	241	CVP Imported Water Ratio
	91231099	San Felipe Reach 3 Gen Maint	19.1%	106	636	742	CVP Imported Water Ratio
	91281007	SVAWPC Facility Operations	0.0%	-	3,221	3,221	No South County Benefit
	91281008	SVAWPC Facility Maintenance	0.0%	-	1,343	1,343	No South County Benefit
	91441003	Desalination	12.7%	3	19	22	M&I Water Usage Ratio
	91451002	Well Ordinance Program	8.5%	118	1,271	1,389	Well Permits and Inpections
	91451005	Source Water Quality Mgmt	12.7%	48	333	381	M&I Water Usage Ratio
	91451011	Invasive Mussel Prevention	16.6%	101	510	611	Raw Water Deliveries
	91761001	Local Res / Div Plan & Analysis	21.0%	175	657	832	Total Water Deliveries Ratio
	91761013	SCADA Systems Upgrades	19.1%	14	60	74	CVP Imported Water Ratio
	91761099	Dams / Reservoir Gen Maint	22.0%	359	1,271	1,630	Program Benefit Calculation
	60061007	WUE Drought Emergency Response	12.7%	78	534	612	M&I Water Usage Ratio
				10,998	**98,238**	**109,235**	

BASIS OF COST ALLOCATIONS BETWEEN NORTH AND SOUTH ZONES (IN THOUSANDS $) … CONTINUED

Cost Center	Project #	Project Name	South County Allocation	South County Share	North County Share	Total FY 2017	Basis of Allocation
Raw Water Transmission & Distribution	92041014	FAHCE/Three Creeks HCP Project	4.3%	90	2,006	2,096	Coyote Water Supply Ratio
	92061012	Facilities Env Compliance	16.6%	10	53	63	Raw Water Deliveries
	92261099	Vasona Pump Station Gen Main	0.0%	-	276	276	No South County Benefit
	92761001	Raw Water T and D Genrl Oper	16.6%	238	1,197	1,435	Raw Water Deliveries
	92761006	Rchrg / RW Field Fac Asset Mgt	39.6%	45	68	113	Groundwater Recharge Ratio
	92761007	Rchrg / RW Field Ops Pln& Anlys	39.6%	94	143	237	Groundwater Recharge Ratio
	92761008	Recycled Water T&D Genrl Maint	100.0%	303	-	303	Benefits only South County
	92761009	Recharge/RW Field Ops	39.6%	1,263	1,926	3,190	Program Benefit Calculation
	92761010	Rchrg / RW Field Fac Maint	39.6%	741	1,130	1,871	Groundwater Recharge Ratio
	92761012	Untreated Water Prog Plan&Analysis	49.0%	58	60	118	Untreated Water Deliveries Ratio
	92761013	SCADA Systems Upgrades	16.6%	7	35	42	Raw Water Deliveries
	92761082	Raw Water T&D Ctrl and Electr	16.6%	118	594	712	Raw Water Deliveries
	92761083	Raw Water T&D Eng Other	16.6%	79	398	478	Raw Water Deliveries
	92761085	Anderson Hydrelctrc Fclty Main	20.3%	26	102	128	Anderson Water Deliveries Ratio
	92761099	Raw Water T / D Gen Maint	16.6%	254	1,277	1,531	Raw Water Deliveries
	92781002	RW Corrosion Control	16.6%	58	293	351	Raw Water Deliveries
				3,385	**9,559**	**12,943**	
Water Treatment and Treated Water Transmission & Distribution	93061012	Facilities Env Compliance	0.0%	-	428	428	No South County Benefit
	93081008	W T General Water Quality	0.0%	-	1,879	1,879	No South County Benefit
	93081009	Water Treatment Plant Engineering	0.0%	-	541	541	No South County Benefit
	93231007	PWTP Landslide Monitoring	0.0%	-	144	144	No South County Benefit
	93231009	PWTP General Operations	0.0%	-	4,280	4,280	No South County Benefit
	93231099	Penitencia WTP General Maint	0.0%	-	2,375	2,375	No South County Benefit
	93281005	STWTP - General Operations	0.0%	-	5,631	5,631	No South County Benefit
	93281099	Santa Teresa WTP General Maint	0.0%	-	2,917	2,917	No South County Benefit
	93291012	RWTP General Operations	0.0%	-	7,581	7,581	No South County Benefit
	93291099	Rinconada WTP General Maint	0.0%	-	3,333	3,333	No South County Benefit
	93401002	Water District Laboratory	1.5%	66	4,307	4,372	Lab Analyses
	93761001	SF/SCVWD Intertie General Ops	0.0%	-	284	284	No South County Benefit
	93761004	Campbell Well Field Operations	0.0%	-	182	182	No South County Benefit
	93761005	Campbell Well Field Maintenance	0.0%	-	116	116	No South County Benefit
	93761006	Treated Water Ctrl & Elec Eng	0.0%	-	2,440	2,440	No South County Benefit
	93761013	SCADA Systems Upgrades	0.0%	-	124	124	No South County Benefit
	93761099	SF/SCVWD Intertie Gen Maint	0.0%	-	91	91	No South County Benefit
	94761005	TW T&D - Engineering - Other	0.0%	-	365	365	No South County Benefit
	94761013	SCADA Systems Upgrades	0.0%	-	24	24	No South County Benefit
	94761099	Treated Water T/D Gen Maint	0.0%	-	1,016	1,016	No South County Benefit
	94781001	Treated Water T/D Corrosion	0.0%	-	262	262	No South County Benefit
				66	**38,321**	**38,387**	

BASIS OF COST ALLOCATIONS BETWEEN NORTH AND SOUTH ZONES (IN THOUSANDS $) … CONTINUED

Cost Center	Project #	Project Name	South County Allocation	South County Share	North County Share	Total FY 2017	Basis of Allocation
Administration & General	95001090	Unscoped Projects-Budget Only	12.7%	44	306	350	M&I Water Usage Ratio
	95011003	WU Asset Protection Support	2.4%	14	552	566	Program Benefit Calculation
	95021008	Electrical Power Support	1.5%	4	232	235	Labor Hours
	95031002	Grants Management	9.0%	32	319	350	Program Benefit Calculation
	95041039	Integrated Regional Water Mgmt	12.7%	13	91	104	M&I Water Usage Ratio
	95041046	Survey Record Management	12.7%	6	40	45	M&I Water Usage Ratio
	95061007	WUE Asset Management Plng Prgm	8.0%	76	875	952	Program Benefit Calculation
	95061012	Rental Expense San Pedro,MH	100.0%	26	-	26	Benefits only South County
	95061027	Water Utility Health & Safety	12.7%	49	337	386	M&I Water Usage Ratio
	95061032	Water Utility Ops Safety Training	12.7%	64	442	507	M&I Water Usage Ratio
	95061037	WUE Training & Development	12.7%	159	1,091	1,250	M&I Water Usage Ratio
	95061038	WUE Administration	12.7%	860	5,909	6,769	M&I Water Usage Ratio
	95061043	WUE ER Response Plan & Implement	5.9%	7	113	120	Population
	95061045	AM Framework Implementation	8.0%	37	430	467	M&I Water Usage Ratio
	95061047	WUE Technical Training Program	12.7%	112	768	880	M&I Water Usage Ratio
	95061048	Climate Change Adaptation/Mtg.	12.7%	21	143	164	M&I Water Usage Ratio
	95062012	WUE Maint Audit Impl Plan	8.0%	4	44	47	Program Benefit Calculation
	95071041	Welding Services	1.5%	3	217	220	Program Benefit Calculation
	95101003	W2 W5 Wtr Revenue Program	63.0%	814	478	1,292	Labor Hours
	95111003	Water Use Measurement	43.3%	751	983	1,733	Labor Hours
	95121001	Fin/Economic Water Rate Study	12.7%	64	437	501	M&I Water Usage Ratio
	95151002	Water Utility Customer Relations	5.9%	17	271	288	Population
	95741001	WUE Long-term Planning	12.7%	67	459	526	M&I Water Usage Ratio
	95741042	Water Resources EnvPlng & Permtg	18.0%	239	1,090	1,330	Program Benefit Calculation
	95761003	SCADA Network Administration	2.4%	4	166	170	Program Benefit Calculation
	95761071	Emergency Preparedness Prog	5.9%	37	585	622	Population
	95761072	Business Continuity Program	5.9%	7	110	116	Population
	95762011	Tree Maintenance Program	12.7%	7	50	57	M&I Water Usage Ratio
	95771011	InterAgency Urban Runoff Program	16.6%	66	334	400	Raw Water Deliveries
	95771031	HAZMAT Emergency Response	10.0%	10	90	100	Emergency Response Events
	95811043	Hydrologic Data Msrmt & Mgmt	17.0%	137	670	808	Stream Gauge location
	95811046	Warehouse Services	12.7%	81	555	636	M&I Water Usage Ratio
	95811049	X Valley Subsidence Survey	0.0%	-	139	139	No South County Benefit
	95811050	Benchmark Maintenance (Countywide)	37.9%	54	88	141	Benchmark Maintenance
	95811054	District Real Property Administration	0.0%	-	140	140	Program Benefit Calculation
				3,885	**18,555**	**22,440**	
		TOTAL		**18,333**	**164,672**	**183,005**	

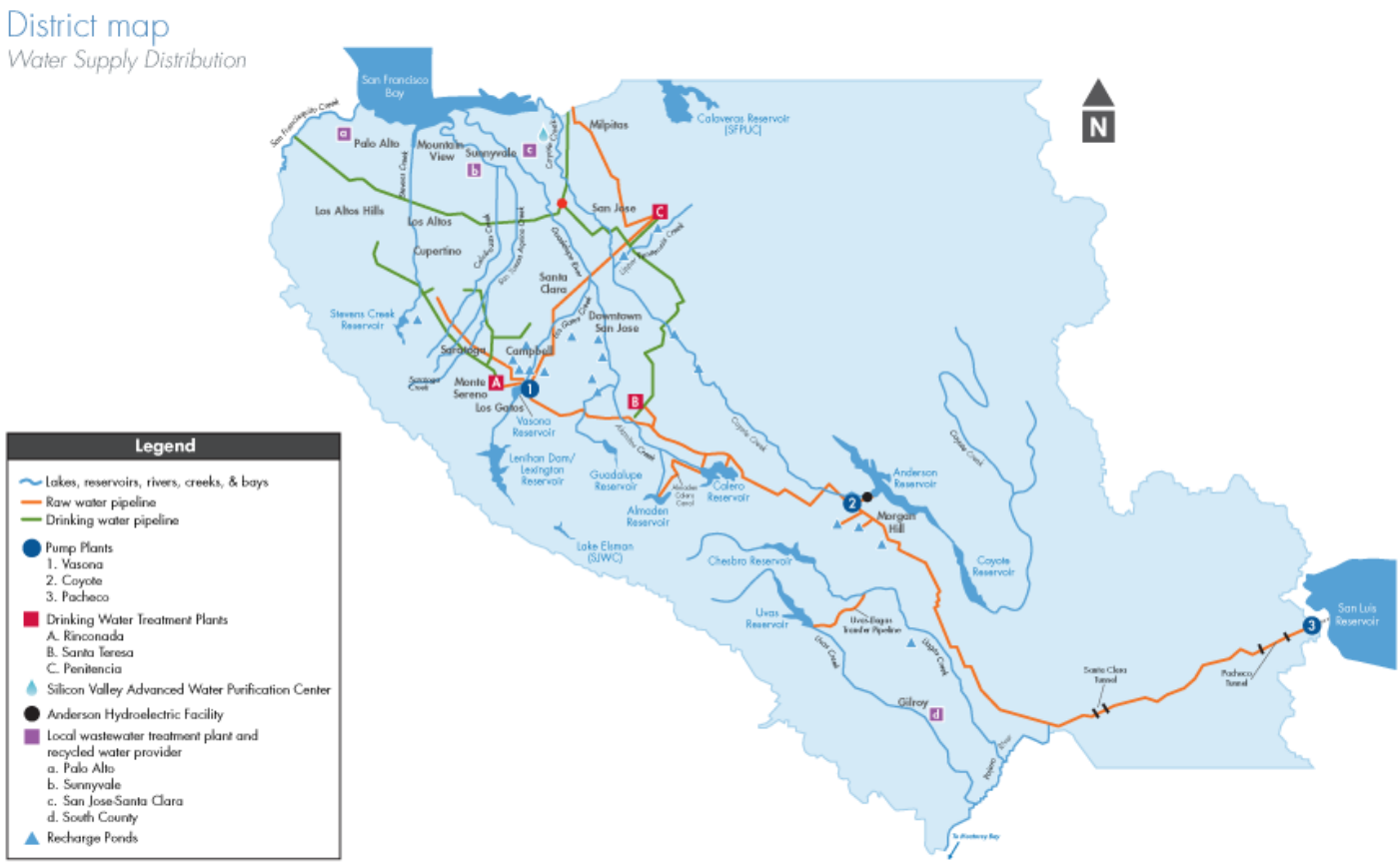
APPENDIX C
SOUTH COUNTY CAPITAL COST RECOVERY

(In Thousands $)						
Job Description	Total Project Cost	South County %	South County Cost	FY 17 Cost Recovery*	Year Cost Recovery is Complete	Basis of Allocation to the South
Uvas Dam & Reservoir	$ 1,124	100.0%	$ 1,124	$ 88	FY 22	Benefits only South County
San Pedro Recharge Facility	$ 1,882	100.0%	$ 1,882	$ 147	FY 22	Benefits only South County
San Pedro Recharge house	$ 700	100.0%	$ 700	$ 47	FY 31	Benefits only South County
Recycled Water Improvements I	$ 7,232	100.0%	$ 7,232	$ 481	FY 32	Benefits only South County
Recycled Water Improvements II	$ 118	100.0%	$ 118	$ 8	FY 33	Benefits only South County
Recycled Water Improvements III	$ 1,721	100.0%	$ 1,721	$ 115	FY 34	Benefits only South County
Water Banking Rights	$ 6,226	8.0%	$ 498	$ 33	FY 35	Total Imported Water Ratio
Dam Instrumentation	$ 6,243	21.0%	$ 1,311	$ 87	FY 41	Program benefit calculation
Geodetic Control Maintenance	$ 236	41.0%	$ 97	$ 6	FY 36	Survey Analysis
Dam Maintenance Mitigation	$ 2,311	22.0%	$ 508	$ 34	FY 45	Program benefit calculation
SC Recycled Water Masterplan - Immediate Term	$ 3,257	100.0%	$ 3,257	$ 216	FY 37	Benefits only South County
SC Recycled Water Masterplan - Short Term Implementation 1A	$ 4,314	100.0%	$ 4,314	$ 286	FY 42	Benefits only South County
South County Recycled Water Fund	$ 8,965	100.0%	$ 8,965	$ 563	FY 46	Benefits only South County
Water Banking FY 06	$ 18,895	9.0%	$ 1,701	$ 113	FY 36	Total Imported Water Ratio
San Felipe Division Capital	$ 8,764	13.5%	$ 1,181	$ 1,181	N/A	Repayment Cost Distribution
Pacheco Pumping Plant Regulating Tank Recoating	$ 2,550	17.0%	$ 434	$ 29	FY 42	CVP Imported Water Ratio
San Felipe Communications Cable Replacement	$ 235	17.0%	$ 40	$ 3	FY 42	CVP Imported Water Ratio
Small Caps, San Felipe	$ 1,560	19.1%	$ 298	$ 239	N/A	CVP Imported Water Ratio
Santa Clara Tunnel Landslide	$ 4,509	15.1%	$ 681	$ 45	FY 39	CVP Imported Water Ratio
SC Tunnel Landslide Mitigation	$ 217	16.9%	$ 37	$ 2	FY 39	CVP Imported Water Ratio
Small Caps, San Felipe Reach 2	$ 124	19.1%	$ 24	$ 24	N/A	CVP Imported Water Ratio
Small Caps, San Felipe Reach 3	$ 567	19.1%	$ 108	$ 108	N/A	CVP Imported Water Ratio
Water Infrastructure Reliability Program	$ 2,134	1.5%	$ 32	$ 2	FY 36	Program benefit calculation
Water Infrastructure Baseline Improvement	$ 2,403	3.6%	$ 87	$ 6	FY 38	Spare pipe usage
Coyote Dam Control Building Improvement	$ 576	19.6%	$ 113	$ 7	FY 42	Anderson deliveries ratio
Pacheco Pumping Plant ASD Replacement	$ 17,330	18.6%	$ 3,223	$ 214	FY 45	CVP Imported Water Ratio
Radio Repeater Infill	$ 5	11.1%	$ 1	$ 0	FY 42	M&I Water Usage Ratio
Santa Clara Conduit Rehab	$ 1,814	17.0%	$ 308	$ 20	FY 42	CVP Imported Water Ratio
Raw Water Control System	$ 9,188	4.3%	$ 399	$ 26	FY 37	Program benefit calculation
Inf Reliability Master Plan	$ 2,712	12.3%	$ 334	$ 21	FY 46	M&I Water Usage Ratio
Water Protection	$ 11,478	2.3%	$ 263	$ 17	FY 45	Program benefit calculation
Microwave Telecommunications	$ 4,595	11.5%	$ 528	$ 35	FY 44	M&I Water Usage Ratio
Pipeline Hydraulic Reliability Upgrade	$ 335	2.3%	$ 8	$ 1	FY 45	Program benefit calculation
Winfield Capital Improvement	$ 4,207	12.7%	$ 534	$ 34	FY 47	M&I Water Usage Ratio
Corp Yard Relocation	$ 26	10.2%	$ 3	$ 0	FY 40	M&I Water Usage Ratio
Information Systems Management	$ 5,802	9.8%	$ 569	$ 38	FY 40	M&I Water Usage Ratio
Peoplesoft Upgrade	$ 78	9.8%	$ 8	$ 1	FY 39	M&I Water Usage Ratio
Peoplesoft System Upgrade & Expansion	$ 1,217	12.3%	$ 150	$ 9	FY 46	M&I Water Usage Ratio
Computer Network Mod	$ 571	11.9%	$ 68	$ 5	FY 45	M&I Water Usage Ratio
Uvas Property Acquisition	$ 1,265	100.0%	$ 1,265	$ 79	FY 46	Benefits only South County
Capital Program Administration	$ 2,011	4.8%	$ 101	$ 101	N/A	Total Capital Cost Ratio
Grand Total	**$ 149,497**		**$ 44,223**	**$ 4,472**		

APPENDIX D
ACRONYMS

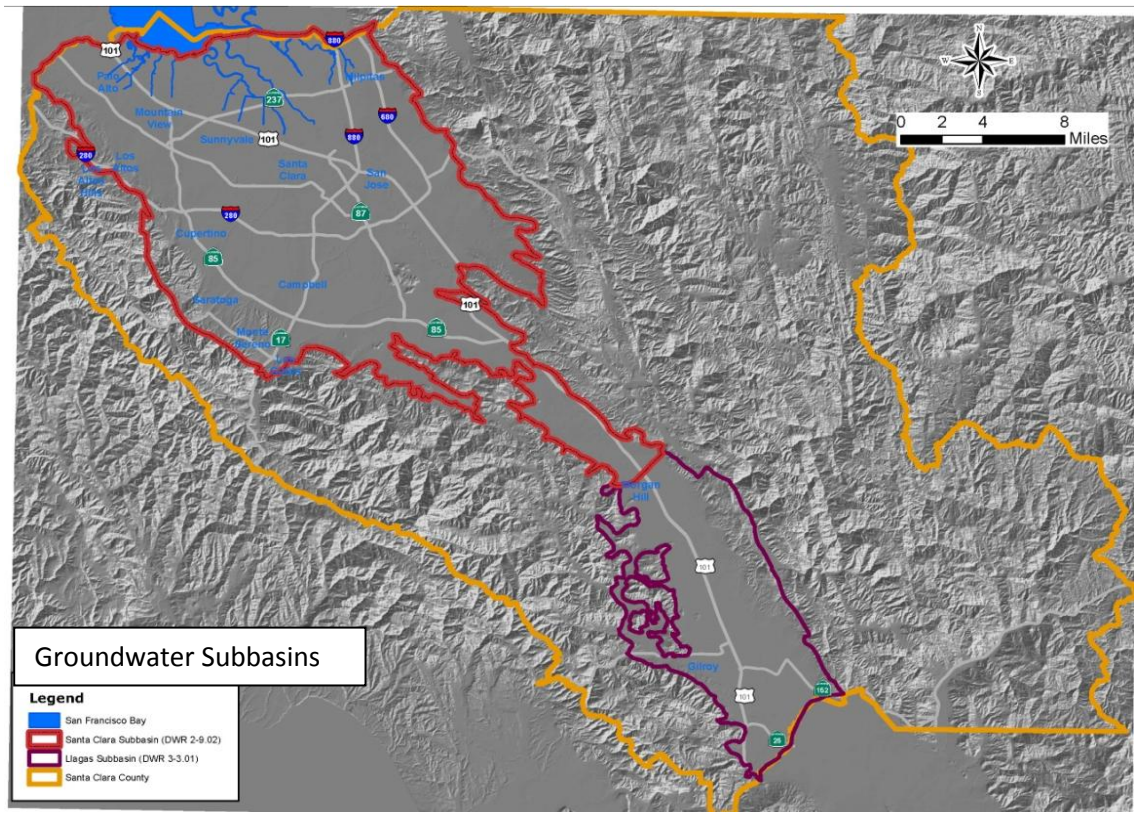
AF	Acre-Foot or Acre-Feet
AG	Agriculture
ASD	Adjustable Speed Drive
board	Board of Directors
CESA	California Endangered Species Act
CIP	Capital Improvement Program
CVP	Central Valley Project
DWR	Department of Water Resources
ESA	Endangered Species Act
FAHCE	Fisheries and Aquatic Habitat Collaborative Effort
FWS	Fish and Wildlife Service
FY	Fiscal Year
GW	Groundwater
HCP	Habitat Conservation Plan
IPR	Indirect Potable Reuse
Llagas Subbasin	Groundwater Subbasin as defined by DWR bulletin 118-2003 and as shown in map of Groundwater Subbasins, area south of Cochrane Road
M&I	Municipal and Industrial
NWS	National Weather Service
NMFS	National Marine Fisheries Service
North County	Northern Santa Clara County, north of Metcalf Road
RFC	Raftelis Financial Consultants, Inc.
RW	Recycled Water
SCADA	Supervisory Control and Data Acquisition
SFPUC	San Francisco Public Utilities Commission
SGMA	Sustainable Groundwater Management Act
SWP	State Water Project
SW	Surface Water
Santa Clara Subbasin	Groundwater Subbasin as defined by DWR bulletin 118-2003 and as shown in map of Groundwater Subbasins, area north of Cochrane Road and includes Coyote Valley
South County	Southern Santa Clara County, south of Metcalf Road
SWRCB	State Water Resources Control Board
Three Creeks HCP	Three Creeks Habitat Conservation Plan
TW	Treated Water
Zone W-2	Charge zone W-2, as defined by zone boundary in map of Water Utility Zones
Zone W-5	Charge zone W-5, as defined by zone boundary in map of Water Utility Zones
water district	Santa Clara Valley Water District
Water Master Plan	Water Supply and Infrastructure Master Plan

APPENDIX E
MAPS

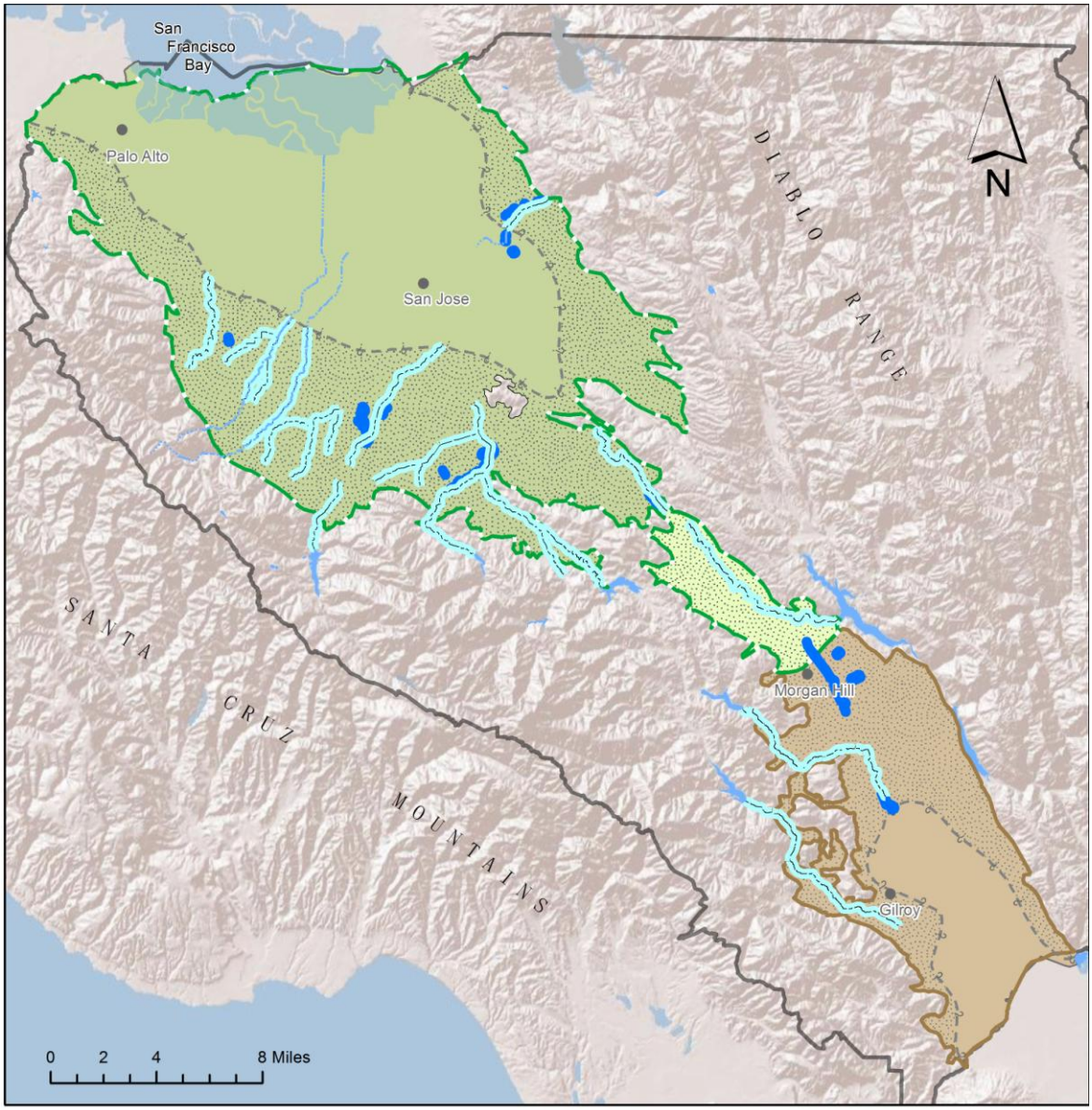


Water Utility Zones in Santa Clara County

Groundwater Subbasins in Santa Clara County



Managed Recharge Facilities



Legend

- District Recharge Pond or Facility
- Instream Recharge
- District Reservoir
- Santa Clara Subbasin (DWR Basin 2-9.02)
- Santa Clara Plain Confined Area
- Santa Clara Plain Recharge Area
- Coyote Valley Recharge Area
- Approximate Extent Confined Area
- Llagas Confined Area
- Llagas Recharge Area
- Santa Clara County
- Llagas Subbasin (DWR Basin 3-3.01)